MATHEMATICS

QUESTIONS AND MODEL ANSWERS

FOR

PRIMARY SCHOOL

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MALAWI PRIMARY SCHOOL

MANEB CURRICULUM

MATHEMATICS QUESTIONS AND MODEL ANSWERS

1. Decrease 1944 in the ratio 2:3

   Solution

   $= \frac{1944 \text{ x } 2}{3}$

   = 1296

2. Express 3.0552 to 2 significant figures

   Solution

   = 3.0552 becomes 3.1 to 2 significant figures

3. What is the smallest number of bananas that can be put in bunches of 18, 30, 120

   Solution

2	18	30	120
2	9	15	60
2	9	15	30
3	9	15	15
3	3	5	5
5	1	5	5
	1	1	1

   LCM = 2 x 2 x 2 x 3 x 3 x 5

   The smallest number = 360

4. A bed was sold at a loss of K1650. If the cost of the bed was K3510. What was the selling price?

   Solution

   Selling price = cost price – loss

= K3510 – K1650

= K1860

5. What is the solution of the inequality: x + 5 ≤ 12?

   Solution

   x + 5 ≤ 12

   x + $\cancel{5}$ – $\cancel{5}$ ≤ 12 – 5

   x ≤ 7

6. A student in a certain school obtained the following marks in English in a term: 54, 80, 70, 54, 83 and 43, what was the mean score?

   Solution

   Mean = $\frac{sum\ of\ all\ values}{number\ of\ the\ values}$

   = $\frac{54+ 80 + 70+ 54 + 83+ 43}{6}$

   = $\frac{384}{6}$

   = 64

7. Brenda receives K2, 300 per fortnight from an employer as her wage. Find the amount of money she gets in a month.

   Solution

   Brenda's wage = K2, 300 per fortnight

   Fortnight = 2 weeks

Month = 2 fortnights

Therefore Brenda's wages per month = K2, 300 x 2

= K4, 600

8. Chikondi bought a bicycle in South Africa worth 500 rands. If one rand is equivalent to K19.74, what is the value of the bicycle in Malawi Kwacha?

   Solution

   R1 = K19.74

   $\therefore$ R500 = more

   $= \frac{\text{R500 x K1974}}{\text{R1}}$

   = K9870.00

9. A person digs $\frac{3}{8}$ of a pit in 24 days. How long will the person take to complete the remaining work?

   Solution

   Total days $= \frac{8}{8}$

   24 days $= \frac{3}{8}$

   Remaining days = $\frac{8}{8} - \frac{3}{8}$

   $= \frac{5}{8}$

   If $\frac{3}{8}$ = 24 days

$\therefore \frac{5}{8}$ = more

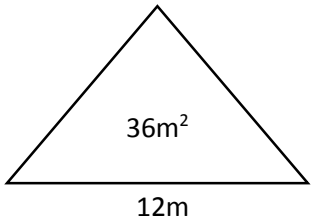
$\frac{5}{8} \div \frac{3}{8}$ x 24

$\frac{5}{\cancel{8}_{1}} \times \frac{\overset{1}{\cancel{8}}}{\cancel{3}_{1}} \times \cancel{24}^{8}$

= 40 days

10. The area of a triangle is $36m^2$. If the base is 12m, find the height.

Solution



Area of a triangle $= \frac{1}{2}$ x base x height

Area of Δ = $36m^2$ (given)

Base = 12m (given)

Height = ?

Therefore: $36m^2 = \frac{1}{\cancel{2}}$ x $\overset{6}{\cancel{12}}$m x h

$\frac{\overset{6}{\cancel{36}}}{\cancel{6}_{1}} = \frac{\overset{1}{\cancel{6}}}{\cancel{6}_{1}}$ x h

Height = 6m

Table below shows the number of eggs collected by a farmer in five days. Use it to answer Questions 11 and 12.

DAY	NUMBER OF EGGS COLLECTED
Monday	𝍸 𝍸 𝍸 ///
Tuesday	///
Wednesday	𝍸 𝍸 /
Thursday	𝍸 𝍸
Friday	𝍸 /

Table

11. What is the number of eggs collected on Wednesday?

    = 11 eggs

12. On which day was there the least number of eggs collected?

    = Tuesday

13. A bus left Majiga at 7:30 am and reached Dziwe at 10:30 am. If it was travelling at an average speed of 90km/h, what distance did it cover?

    SOLUTION

    10.30 – 7.30 = 3 hours

    Distance = speed x time

    = 90km/h x 3 hours

    = 270km

14. An obtuse angle is an angle which is _____

    = Greater than 90^{o} but less than 180^{o}

15. Bwemba gets a commission of K600 for every K10 000 on items sold. Find the total commission Bwemba would get after selling items worth K35 000.

    WORKING

    K10, 000 = K600

K35, 000 = ? more

$$= \frac{\text{K35,000 x K600}}{\text{K10,000}}$$

= K350 x K6

= K2, 100

Figure below shows a quadrilateral ABCD. Use it to answer Questions 16 and 17.

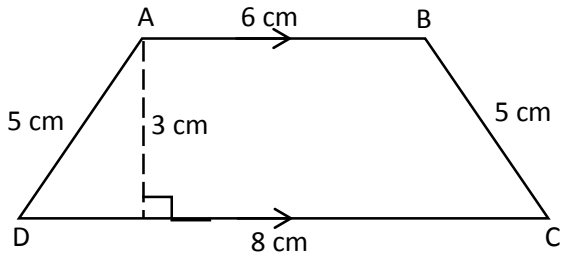


Figure 1

16. What is the name of the quadrilateral?

= trapezium

17. Find the area of the quadrilateral

Area of trapezium = ½ (sum of parallel sides) x height

= ½ (6cm + 8cm) x 3

= 7 x 3

= 21 cm^2

18. Express $2\frac{1}{3}$ as decimal number

$$\frac{7}{3}$$

2.33

19. Simplify $7x + 8y - 3x + y$

SOLUTION

$7x - 3x + 8y + y$

$4x + 9y$

20. What is the rule for generating a number pattern 49, 63, 77, 91?

Subtracting the first number from the second number = 63 – 49

= 14

Add 14

21. Change the ratio 16:84 to a fraction

$$\frac{\cancel{16}^{8}}{\cancel{84}_{42}} = \frac{\cancel{8}^{4}}{\cancel{42}_{21}}$$

$$= \frac{4}{21}$$

22. By how much does the sum of 25.04 and 96.75 exceed 72.5?

WORKING

(25.04 + 96.75) – 72.5

121.79 – 72.5

= 49.29

23. Arrange the following Roman Numerals VI, IX, V, VIII in descending order

IX VIII VI V

24. Benjamin started business on 1st July 2018 with K52 000 in bank. During the month, Benjamin's transactions were as follows:

2nd July	withdrew K40 000
7th July	bought maize K30 000
10th July	sold maize K45 000
15th July	banked K33 000

a. Prepare Benjamin's cashbook

BENJAMIN'S CASHBOOK

Dr Cr

DATE	INCOME	CASH	BANK	DATE	INCOME	CASH	BANK
01/04/2018	Capital in bank		K52 000	02/04/2018	Withdrew		K40 000
02/04/2018	Withdrew	K40 000		07/04/2018	Bought maize	K30 000	
10/04/2018	Sold maize	K45 000		15/04/2018	Banked	K33 000	
15/04/2018	Banked		K33 000				
					Balance c/f	K22 000	K45 000
		K85 000	K85 000			K85 000	K85 000
01/05/2018	Balance b/d	K22 000	K45 000				

b. What was Benjamin's capital on 1st August?
= K67 000

25. Divide 370 oranges amongst Thoko, Joyce and Stanley in the ratio of $\frac{1}{2} : \frac{3}{8} : \frac{2}{3}$. How many oranges does each learner get?

Thoko	Joyce	Stanley
$\frac{1}{2}$	$\frac{3}{8}$	$\frac{2}{3}$

Total parts = $\frac{1}{2} + \frac{3}{8} + \frac{2}{3}$

$$\frac{1}{2} + \frac{3}{8} + \frac{2}{3}$$

$$\frac{12 + 9 + 16}{24}$$

$$\frac{37}{24}$$

Thoko = $\frac{1}{2} \div \frac{37}{24}$ x 370

= 120 oranges

Joyce = $\frac{3}{8} \div \frac{37}{24}$ x 370

= 90 oranges

Stanley = $\frac{2}{3} \div \frac{37}{24}$ x 370

= 160 oranges

Table below shows temperature readings in ^{o}C for different stations. Use it to answer questions 26 and 27

Table 1

Station	Temperature
P	35
S	13
K	21
M	19

26. Which station was coldest?

= Station S

27. Find the average temperature for all the stations.

Average temperature = $\frac{35 + 13 + 21 + 19}{4}$

= $\frac{88}{4}$

= 22^0C

28. A cow had a mass of 201 Kg 150 g and a bull had a mass of 232 Kg 301 g. find the difference in mass between the two cattle.

232 Kg 301 g

– 201 Kg 150 g

31 Kg 151 g

29. A farmer received a cheque worth K15 500 and deposited it into his account. He deposited again K12 000 after selling his bags of beans and the bank deducted K1 200 as bank charges. How much money remained in his account?

SOLUTION

K15 500 + K12 000 – K1 200

K26 300

30. A circle has a diameter of 21 cm. calculate its:

a. Circumference
b. Area

(Take $\pi = \frac{22}{7}$)

a. Circumference

WORKING
Circumference of a circle = πd

$= \frac{22}{7}$ x 21 cm

= 66 cm

b. Area

WORKING

Area of a circle = πr^2

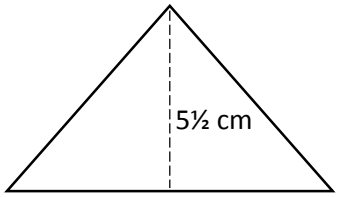
$= \frac{22}{7}$ x 10.5 x 10.5

$= \frac{2425.50}{7}$

= 346.50 cm^2

31. Find the base of a triangle which has an area of 22 cm^2 and a height of 5½ cm

Area = 22 cm^2



Area = ½ x base x height

22 cm^2 = ½ x base x 5½

22 cm^2 = $\frac{1}{2}$ x base x $\frac{11}{2}$ = $\frac{11}{4}$

$\frac{22}{\frac{11}{4}}$ = base x $\frac{\frac{11}{4}}{\frac{11}{4}}$

$\frac{22}{1} \div \frac{11}{4}$ = base

$\frac{\overset{2}{\cancel{22}}}{1} \times \frac{4}{\underset{1}{\cancel{11}}}$ 2 x 4 = 8

∴ Base = 8 cm

32. Tayamika bought 20 mangoes for 4 for 40t and she sold them at 5 for 60t. What was her profit?

Bought 20 mangoes for 4 = 40t

$\frac{20}{4}$ x 40t

= 5 x 40t

= 200t

Sold 20 mangoes for 5 = 60t

$\frac{20}{5}$ x 60t

= 4 x 60t

= 240t

Profit = 240t – 200t

∴ Her profit = 40t

33. Express 624893 cm in km, m and cm

1 km = 100 000 cm

1 m = 100 cm

1 cm = 1 cm

	6 km			248 m	
100 000	624 893	100	24 893	1	98
–	600 000	–	24 800	–	98
	24 893		93		00

∴ 624 893 cm in km, m and cm is 6 km 248 m 98 cm

= 6 km 248 m 98 cm

34. The mass of a tin and peas is 52.52 Kg. if the mass of the peas is 49.56 Kg, find the mass of the tin

SOLUTION

Mass of tin and peas = 52.52 Kg

Mass of peas = 49.56 Kg

Mass of tin = mass of both tin and peas – mass of peas

= 52.52 Kg – 49.56 Kg

= 2.96 Kg

∴ Mass of tin = 2.96 Kg

35. Calculate compound interest on K70 000 for 2 years at 10% per annum

1st year principal = K70 000

$$I = \frac{PTR}{100}$$

$$= \frac{\text{K70 000 x 1 x 10}}{100}$$

= K7000

2nd year principal = K7000 + K70 000 = K77 000

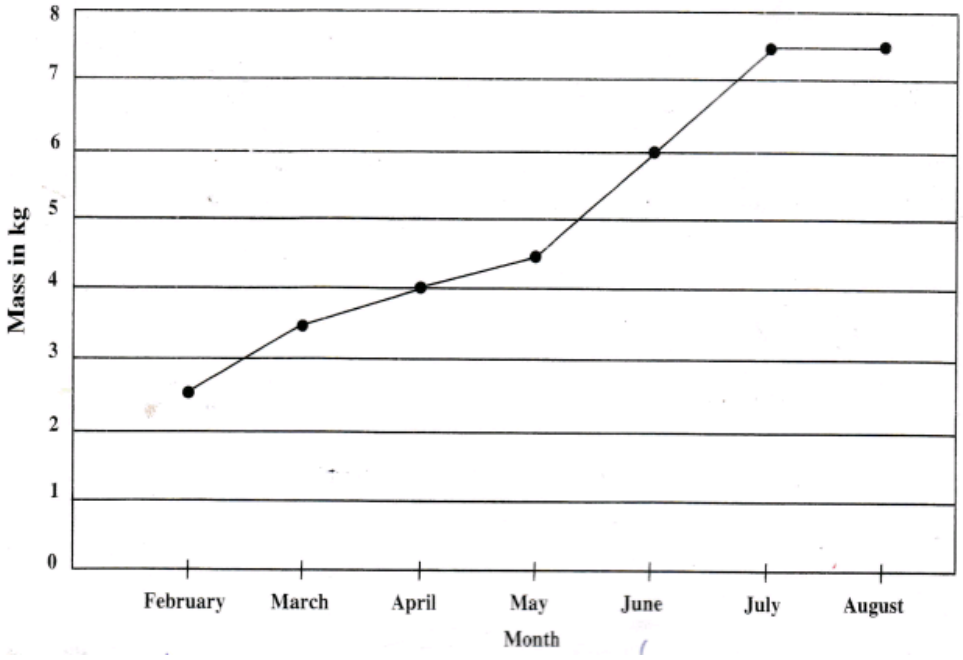
$$I = \frac{K77\ 000 \times 1 \times 10}{100}$$

= K7700

Compound interest = K7000 + K7700

= K14 700

Figure below is a line graph showing mass of a baby recorded in kg for 7 months. Use it to answer questions 36 to 38.



36. In which months was the mass of the baby same?

= July and August

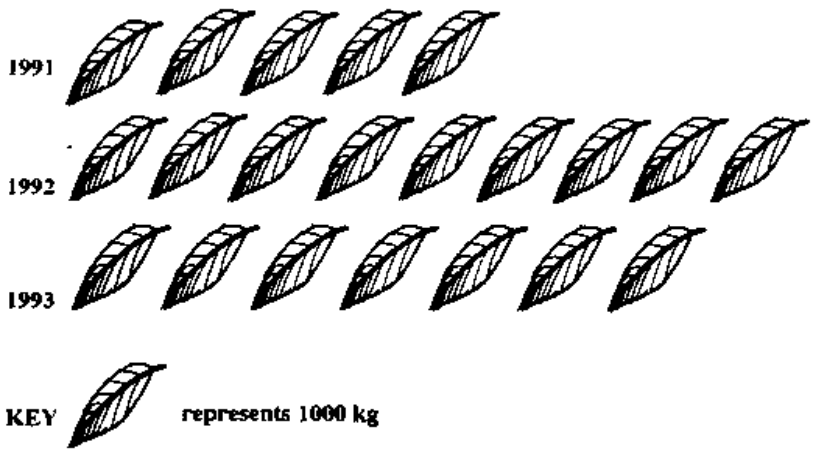
37. What was the mass of the baby in the month of May?

= 4.5 kg

38. How long did it take for the mass of the baby to reach 6 kg from 2.5 kg?

= 5 months

39. Figure below shows amount of tobacco produced on a certain farm for three years.



a. What was the difference in kg between the year of highest harvest and that of the lowest harvest?

WORKING

= Year of highest harvest (1992) – year of lowest harvest (1991)

= 9000 kg – 5000 kg

= 4000 kg

b. How much money from tobacco sales did the farm have in 1993 if tobacco was bought at an average price of K80 per kg?

WORKING

All tobacco in 1993 = 7000 kg

Tobacco sales = if 1 kg = K80

∴ 7000 kg = more

= 7000 kg x K80

= K560 000

c. What was the average amount of tobacco produced during the three years?

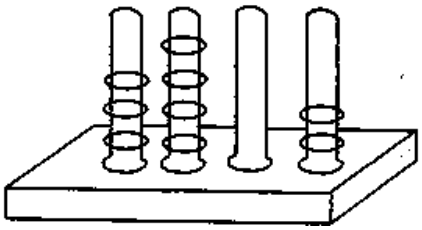
WORKING

Average amount of tobacco $= \frac{sum\ of\ all\ tobacco\ collected}{number\ of\ years}$

$= \frac{5000\ kg + 9000\ kg + 7000\ kg}{3\ years}$

= 7000 kg

Figure below is a diagram showing a picture of a number modelled on an abacus.



40. What number is represented on the abacus?

= 3402

41. A vendor bought 240 eggs for K6000.00. Calculate the profit percent made, if 22 eggs were broken and the rest were sold at K30.00 each

WORKING

Bought 240 eggs = K6000

Broken eggs = 22

Remaining eggs = 240 – 22 = 218

Sold 218 eggs at K30 each = K6540

Profit made = selling price– cost price

= K6540 – K6000

= K540

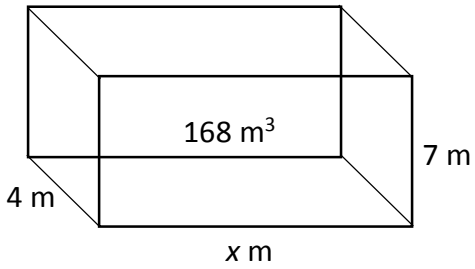
Profit percent = $\frac{\text{profit x } 100}{\text{cost price}}$

$= \frac{540 \text{ x } 100}{6000}$

$= \frac{54}{6}$

= 9%

42. A rectangular tank 4 m wide and 7 m high has a volume of 168 m^3. Calculate the length of the tank.



Volume = Length x Width x Height

168 m^3 = *Length* x 4 m x 7 m

$\frac{168 \text{ m}^3}{28} = \textit{Length} \times \frac{28 \text{ m}}{28 \text{ m}}$ (6)

∴ Length = 6 m

43. Express 10075 tambala in kwacha and tambala.

$$\begin{array}{r|l} & 100 \\ \hline 100 & 10075 \\ & -\,10000 \\ \hline & 75 \end{array}$$

∴ 10075 tambala in kwacha and tambala

= K100 75t

44. Write sixty five million one hundred and twelve in figures

Sixty five million	=	65 000 000
One hundred	=	100
Twelve	=	12
		65 000 112

= 65 000 112

45. Write 0.0798 to 2 significant figures

0.0798 to 2 significant figures is 0.080

= 0.080

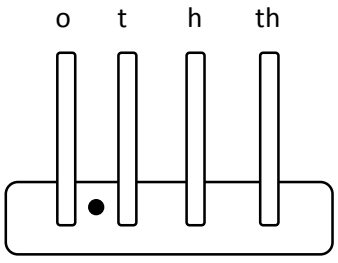
46. Take away the sum of 1625 and 1021 from 3000.

1625 + 1021 = 2646

3000 – 2646 = 354

= 354

47. What is the place value of 5 in 64.521?



Place value of 5 in 64.521 is tens

48. Divide 784 by 10 giving your answer correct to the nearest whole number.

$$
\begin{array}{r|l}
 & 78 \\
\hline
10 & 784 \\
 & -10 \\
\hline
 & 84 \\
 & 80 \\
\hline
 & 4
\end{array}
$$

78.4 to the nearest whole number

= 78

49. Tina bought a dress at K3500. Zione made a similar dress from 2 metres piece of cloth at K750 per metre, 6 buttons at 3 for K100, and thread for K60. How much did Zione save?

WORKING

Tina bought a dress = K3500

Zione bought 2 metres piece of cloth = K750 x 2 = K1500

6 buttons at 3 for K100 = K100 x 2 (6 buttons ÷ 3) = K200

Thread = K60

= K1500 + K200 + K60

= K1760

Zione saved = K3000 – K1760

= K1240

50. A picture of a tree is 8 cm long. If the scale used was $\frac{1}{4}$, find its actual length.

Answer

1 cm represents 4 cm

∴ 8 cm = ? (more)

∴ Length of the object $= \frac{4 \text{ cm x } 8 \text{ cm}}{1 \text{ cm}}$

= 32 cm

51. Find the total amount to be paid on a loan of K18 000 for 3 years at 5% simple interest.

Answer

Simple interest (I) = $\frac{PTR}{100}$

= $\frac{\text{K18 000 x 3 x 5}}{100}$

= K180 *x* 3 *x* 5

= K2 700

52. Simplify $18t + 4 - 2t - 1$

Answer

$= 18t - 2t + 4 - 1$

$= 16t + 3$

53. Simplify $\frac{0.6 \text{ x } 0.8}{0.012}$

Answer

First remove decimal points to ease things.

0.6 becomes 60
0.8 becomes 80
0.012 becomes 120

$\frac{60 \text{ x } 80}{120}$

$\frac{4800}{120}$

= 40

54. Find the median of the following set of numbers:

23, 17, 23, 17, 18, 19, 15, 16

Answer

Median of 15, 16, 17, 17, 18, 19, 23, 23

Median $\frac{17+18}{2}$

= 17.5

55. A worker receives K23 500 per month as his net salary. If the gross salary per month is K28 000, find the total tax that the worker will pay after a year.

Answer

Net salary = K23 500

Gross salary = K28 000

Tax per month = K28 000 – K23 500

= K4 500

Total tax after a year = K4 500 x 12

= K54 000

56. Find the greatest number of farmers that can share 12 treadle pumps, 24 bags of fertilizer and 32 packets of seeds without a remainder.

2	12	24	32
2	6	12	16
2	3	6	8
2	3	3	4
2	3	3	2
3	3	3	1
	1	1	1

The greatest number = 2 *x* 2

= 4

57. A hen laid 2*x* eggs. After hatching 5 chicks, 7 eggs remained. Find the value of *x*.

$2x - 5 = 7$

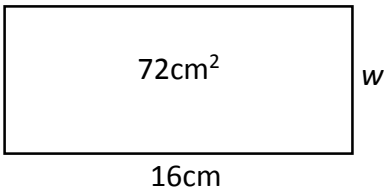
$2x - 5 + 5 = 7 + 5$

$2x = 12$

$\frac{\cancel{2}x}{\cancel{2}} = \frac{12}{\cancel{2}}$

$x = 6$

58. The area of a rectangle is $72cm^2$ and its length is 16 cm. Calculate the perimeter of the rectangle.



Area of a rectangle = L x B

$$\frac{72\ cm^2}{16\ cm} = \frac{16\ cm \times w}{16\ cm}$$

$$4.5\ cm = w$$

Perimeter of a rectangle = (2 *x* L) + (2 *x* w)

= (2 *x* 16 cm) + (2 *x* 4.5 cm)

= 32 cm + 9 cm

= 41 cm

59. A school has 800 learners, 25% are girls. If 75% of the girls stay at the boarding, find the number of girls who do not stay at the boarding.

Total learners = 800

Girls = 25%

Number of girls $= \frac{800}{1} \times \frac{25}{100}$

= 200

Girls at boarding = 75%

$= \frac{200}{1} \times \frac{75}{100}$

= 150

Girls who do not stay at boarding = 200 – 150

= 50 girls

60. By selling a car for K500 000, a loss was made at the rate of 6t per kwacha. Find the amount lost.

Working

$$= \frac{\text{K500,000 x 6t}}{100}$$

= K30 000

Or

Loss per kwacha = 100t – 6t

= 94t

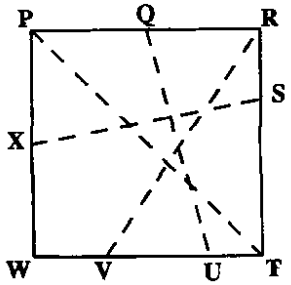
$$= \frac{500\ 000 \text{ x } 94}{100}$$

= K470 000

Amount lost = K500 000 – K470 000

= K30 000

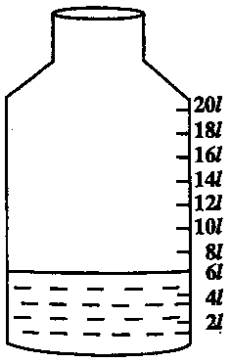
61. Figure below shows a square with line drawn on it. Use it to answer question that follows.



Which line is a line of symmetry of the diagram?

= PT

Figure below is a diagram of a bottle containing paraffin. Use it to answer questions 62 and 63



62. How many more litres of paraffin are needed to fill the bottle to the maximum marked level?

Paraffin in the bottle = 6*l*

Paraffin needed to fill the bottle = 20*l* – 6*l*

= 14*l*

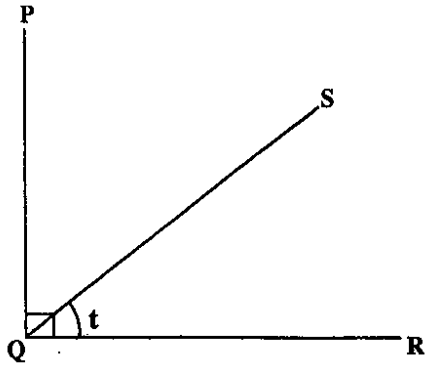
63. If the cost of paraffin is K500 per litre, find the cost of paraffin that is in the bottle.

Paraffin in the bottle = 6*l*

Cost of paraffin in the bottle = K500 x 6*l*

= K3 000

64. Figure below shows a right angle **PQR** and line **QS** bisects the angle.



What is the value of angle t?

Right angle = 90^{o}

Bisected 90^o angle = $90^o \div 2$

= 45^o

Table blow shows business transactions for Mr. Phiri for the month of November 2010. Use it to answer questions 65 and 66

Dr Cr

Date	**Income**	**Cash**	**Bank**	**Date**	**Expenditure**	**Cash**	**Bank**
02/11/10	Cash	K8 000		02/11/10	Banked	K3 500	
08/11/10	Receipt		K10 000		Paid for goods	K 600	

65. What type of account is shown in the table?

Cash book account

66. What was the balance in hand on 1 December 2010?

K8 000

K3 500

– K 600

K3 900

Balance in hand = K3 900

Table below shows rates of sending mail within Malawi.

POSTAL ARTICLE	**MASS**	**RATE (k)**
By ordinary mail	up to 1000 g	150
	above 1000 g up to 3500 g	200
	above 3500 g up to 5000 g	350
	above 5000 g up to 7500 g	400
By express mail	up to 500 g	750
	above 500 g up to 10 kg	1000

67. How much would a person pay altogether for sending an ordinary mail of 550 g and an express mail of 800 g?

WORKING

Ordinary mail of 550 g is in the section of up to 1000 g = K150

Express mail of 800 g is in the section of above 500 g up to 10 kg = K1000

Altogether = K550 + K1000

= K1150

68. Simplify 3.2 + 4.65 ÷ 1.5

= 3.2 + (4.65 ÷ 1.5)

= 3.2 + 3.1

= 6.3

69. Solve the inequality $3x + 3 \leq 15$

$3x + 3 \leq 15$

$= 3x + 3 - 3 \leq 15 - 3$

$= 3x \leq 12$

$= \frac{3x \leq 12}{3 \quad 3}$

$\therefore x \leq 4$

70. Change the time 2:15 pm to 24 hours.

14:15 hours

71. Takondwa and Chikondi shared sweets in the ratio of 5:7. If Chikondi got 42 sweets, how many sweets did Takondwa get?

WORKING

Ratio = 5:7

Chikondi' share = 42 sweets

Takondwa's share = ? (less)

$= \frac{5}{7}$ x 42

= 30 sweets

72. When the number ***m*** is reduced by ***13***, the result is ***15***. Calculate the number represented by ***m***.

Working

m – 13 = 15

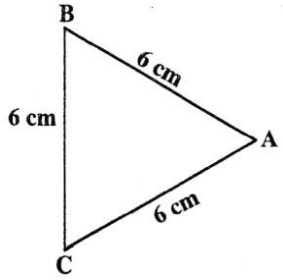
m – 13 + 13 = 15 + 13

m = 28

73. Write a statement to represent the inequality x ≥ 3

x is greater than or equal to 3

Figure below shows a triangle **ABC**. Use it to answer question 74



74. What name is given to the type of triangle **ABC** in the figure above?

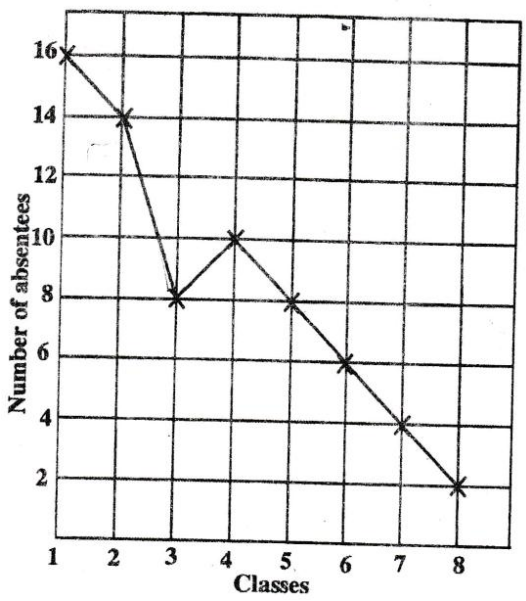
Equilateral

75. Chifundo scored 80% in a test. If the test was marked out of 20, calculate Chifundo's actual score.

Actual score $= \frac{80}{100}$ x 20

= 16

Figure below is a line graph showing the number of pupils who were absent from school on a certain Monday at Dzamani Primary School. Use it to answer questions 76 and 77



76. Find the difference between the number of absentees in classes **1** and **4**.

SOLUTION

Number of absentees in class **1** = 16

Number of absentees in class **4** = 10

The difference = 16 – 10

= 6

77. Find the average number of pupils who were absent in classes **2** and **7**.

SOLUTION

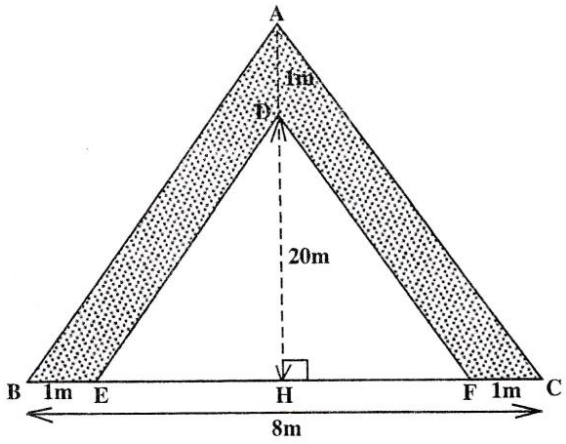
Number of pupils absent in class **2** = 14

Number of pupils absent in class **7** = 4

Average $= \frac{18}{2}$

= 9

78. Figure below shows a triangular space **ABC** with a flower lawn 1 m wide. **BC** = 8 m and **DH** = 20 m



Calculate the area of the lawn.

WORKING

Area of the lawn = total triangular space – space without lawn

$= (\frac{1}{2} \times 8 \times 21) - (\frac{1}{2} \times 6 \times 20)$

$= 84\ m^2 - 60\ m^2$

$= 24\ m^2$

79. Tadyere started a business on 1st January, 2010 with cash in hand K20 000.00. During the month Tadyere's transactions were as follows:

2nd January banked K10 000.00

5th January sold goods K8575.oo each

10th January cashed a cheque for goods sold K9 000.00

15th January paid loan K5350.00

Prepare Tadyere's cash account and bring down the balance ready for business on 1st February.

Tadyere's cash account

Dr Cr

Date	Income	Amount	Date	Expenditure	Amount
01/01/10	Cash in hand	K20 000	15/01/10	Paid loan	K 5 350
02/01/10	Banked	K10 000			
05/01/10	Sold goods	K 8 575			
10/01/10	Cashed a cheque	K 9 000	31/01/10	Balance c/d	K42 225
		K47 575			K47 575
01/02/10	Balance b/d	K42 225			

80. A rectangular garden measures 520 m by 280 m. Reduce the measurements using a scale of 1:20

Solution

$$1{:}20 \text{ of } 520 \text{ m} = \frac{1}{20} \text{ of } 520 \text{ m}$$

$$= 26 \text{ m}$$

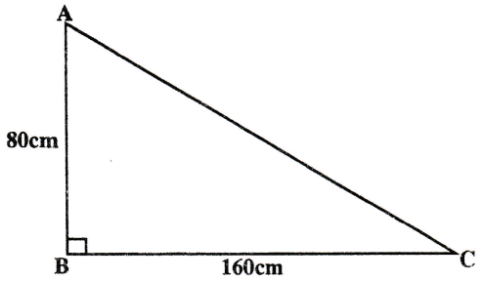
$$1{:}20 \text{ of } 520 \text{ m} = \frac{1}{20} \text{ of } 280 \text{ m}$$

$$= 14 \text{ m}$$

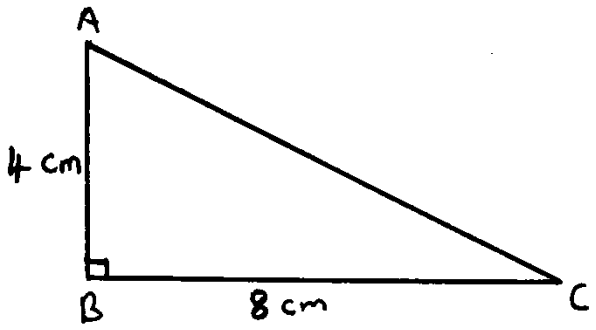
$\therefore$ 1:20 of 520 m by 280 m

= 26 m by 14 m

81. Figure below shows a triangle **ABC** in which angle **ABC** = 90^o, **AB** = 80 cm and **BC** = 160 cm.



a. Draw the figure accurately using a scale of 1 cm representing 20 cm.



b. In your diagram, measure angle **BAC** and state its value.

= 64°

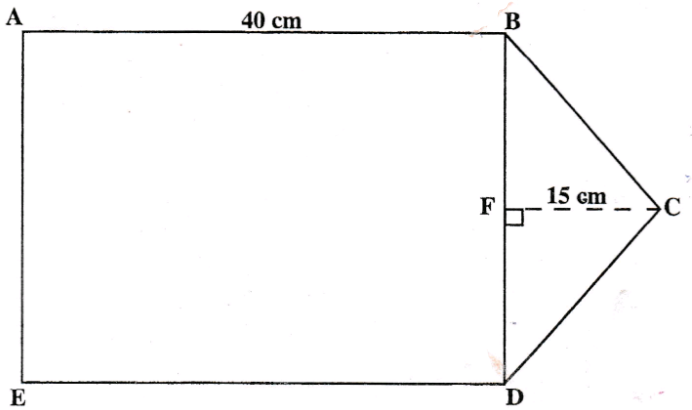
82. Express 1549 to the nearest hundred

Working

1549 to the nearest hundred = 1600

= 1600

Figure below shows a composite shape made up of a square **ABDE**, and a triangle **BCD** in which **AB** = 40 cm and **CF** = 15 cm.



83. If **CF** is a perpendicular height of the triangle, calculate the area of the shape.

Area of the shape = area of square ABDE + area of triangle BCD

Area of a square = length x length (L^2)

= 40 cm x 40 cm

= 1600 cm^2

Area of a triangle = $\frac{1}{2}$ x base x height

= $\frac{1}{2}$ x 40 cm x 15 cm

= 300 cm^2

∴ Area of the shape = 1600 cm^2 + 300cm^2

= 1900 cm^2

84. Simplify 12e + 8f – 5 – 7f + 5e + 6

Working

12e + 8f – 5 – 7f + 5e + 6

12e + 5e + 8f – 7f – 5 + 6 (collecting like terms together)

12e + 5e = 17e

+ 8f – 7f = f

– 5 + 6 = 1

= 17e + f + 1

85. Write the following Roman numerals in Hindu-Arabic numerals

Solution

XXIX

X = 10

X = 10

IX = 9

∴ XXIX = 29

86. What would be the result if 0.382 is multiplied by 2.1?

Solution

$$\begin{array}{r} 0.382 \\ \times\ 2.1 \\ \hline 0382 \\ 0764 \\ \hline 0.8022 \end{array}$$

87. A shopkeeper bought a tin of paint at K2500.00 and sold it at K2900.00. Calculate the profit percent.

Working

Profit = selling price – cost price

= K2900 x K2500

= K400

$$\text{Profit \%} = \frac{\text{profit x } 100\%}{\text{cost price}}$$

$$= \frac{\text{K400 x } 100\%}{\text{K2500}}$$

= 16%

Figure below shows a type of an angle. Use it to answer question 88



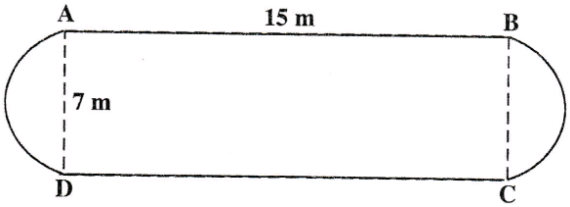
88. What name is given to the type of an angle in figure above?

Working

The angle is more than 180^0

∴ = Reflex angle

89. Figure below shows a rectangle **ABCD** 15 cm long and 7 cm wide with semi-circles on two opposite sides.



Calculate the perimeter of the figure. (Take $\pi = \frac{22}{7}$)

Working

Perimeter = AB + DC + perimeter of two semicircles

Perimeter of semicircle $= \frac{1}{2}\pi d$

$= \frac{1}{2} \times \frac{22}{7} \times 7$

= 11 cm

∴ Perimeter of the figure = 11 cm + 11 cm + 15 cm + 15 cm

= 52 cm

90. What does "b/d" stand for in accounting?

brought down

91. Table below shows a message sent by telegram.

FROM:	**MPHATSO BOX 555 LIWONDE** **SCHOOL CLOSES NEXT WEEK** **SEND TRANSPORT**
TO:	**MRS MWALE BOX 6814** **BLANTYRE**

How much was the cost of sending the telegram at K12.00 per word?

Working

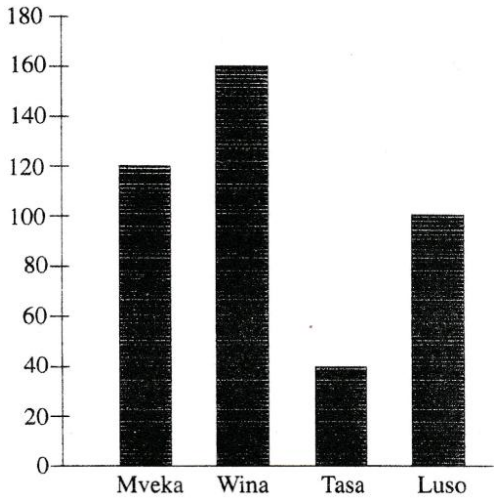
Number of words = 15

Rate per word = K12.00

Total = 15 x 12.00

= K180

Figure below is a bar graph showing number of trees planted by four primary schools in a certain year. Use it to answer questions 92 and 93.



92. Which primary school planted the least number of trees?

Tasa

93. How many more trees did Mveka plant than Tasa?

Working

Mveka planted 120 trees

Tasa planted 40 trees

To find how many more trees Mveka planted than Tasa is 120 – 40

∴ = 80 trees

94. Divide 92 kg 15 g by 7

	Kg	g
	13	145
7	92	15
	7	1000
	22	1015
	21	– 7
	1	31
	x 1000	– 28
	1000	35
		– 35
		00

95. Loza gets a commission of K40 on every 5 blouses she sells. If she sells 125 blouses, find her commission.

Solution

Commission on 5 blouses = K40

If she sells 125 blouses for 5 blouses = 125 ÷ 5

= 25

To find her commission = 25 x K40

= K1000

Or

$$\frac{\text{K40 x 125}}{5}$$

= K1000

96. A trader paid 17.5% value added tax for goods worth K2 800. How much was the value added tax?

Working

VAT = 17.5 of K2800

$= \frac{17.5 \text{ x } K2800}{100}$

= K490

97. Table below shows the monthly premium per K10 000 for life insurance policy for 26 to 28 years olds.

Age (years)	**Rate per K10 000 Per month**
26	K51.70
27	K51.80
28	K52.00

A man 28 years old and his wife 26 years old want to insure their lives for K150 000 each. Find the total monthly premium for the two.

WORKING

Monthly premium for a man $= \frac{K52.00 \text{ x } K150\ 000}{K10\ 000}$

= K780

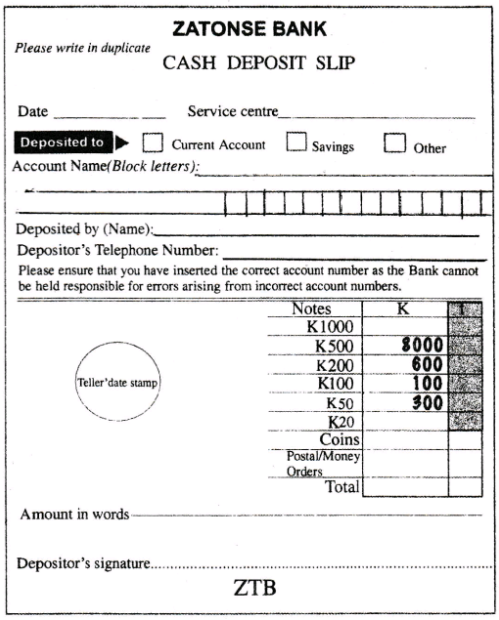
Monthly premium for a woman $= \frac{K51.70 \text{ x } K150\ 000}{K10\ 000}$

= K775.50

Total monthly premium for the two = K780 + K775.50

= K1555.50

Figure below shows a cash deposit form for Zatonse Bank which is partly filled. Use it to answer questions 98 and 99



ZATONSE BANK

Please write in duplicate

CASH DEPOSIT SLIP

Date _____ Service centre_____

Deposited to ▶ ☐ Current Account ☐ Savings ☐ Other

Account Name*(Block letters)*:_____

Deposited by (Name):_____

Depositor's Telephone Number: _____

Please ensure that you have inserted the correct account number as the Bank cannot be held responsible for errors arising from incorrect account numbers.

Teller'date stamp

Notes	K	
K1000		
K500	8000	
K200	600	
K100	100	
K50	300	
K20		
Coins		
Postal/Money Orders		
Total		

Amount in words_____

Depositor's signature.....

ZTB

98. How many 500 kwacha notes were deposited?

To find the number of 500 kwacha notes = K8000 ÷ K500

= 16 notes

99. Find the total amount of money that was deposited.

WORKING

Total amount of money deposited = K8000 + K600 + K100 + K300

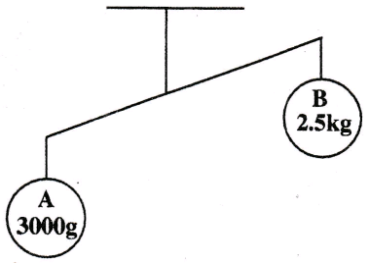
= K9000

100. Express 90^o as a fraction of a complete turn.

$$\frac{90^o}{360^o}$$

$$\frac{1}{4}$$

Figure below shows a simple balance with mass of two different balls: **A** and **B**. Use it to answer questions 101 and 102



101. What is the mass of the ball **B** in grammes?

Solution

Mass of the ball in grammes $= \frac{2.5 \text{ kg x } 1000 \text{ g}}{1 \text{ kg}}$

$= 2500 \text{ g}$

102. How many grammes should be added to the ball **B** so that it balances with the ball **A**?

Solution

Amount of grammes to be added $= 3000 \text{ g} - 2500 \text{ g}$

$= 500 \text{ g}$

103. Table below shows rates of tax on salary per month for a certain country,

Salary per month	**Tax rate**
First K9 000.00	% (tax free)
Next K10 000.00	15%
Next K12 000.00	25%
Next K15 000.00	35%

If a worker earns K30 000.00 per month, calculate the worker's monthly tax.

WORKING

Income	Rate	Tax
K9 000	0%	no tax

K15 000	15%	$\frac{15\% \text{ x } K10\ 000}{100}$
		= 15 x 100
		= K1 500
K11 000	25%	$\frac{25\% \text{ x } K11\ 000}{100}$
		= 25 x K110
		= K2750
Monthly tax		= K1 500 + K2750
		= K4 250

104. After selling a bicycle at K10 800.00, a person made a loss of 10%. After what price must have a person sold it to gain 5%.

WORKING

Selling price = K10 800

To find selling price without a loss of 10%

Selling price = cost price – loss

The rate with a loss = 100% – 10%

= 90%

If 90% = K10 800

Then 100% = ? (more)

Selling price = $\frac{K10\ 800 \text{ x } 100}{90}$

= K12 000

To find selling price that a person must have sold to gain 5%

Profit = selling price x profit %

= $\frac{K12\ 000 \text{ x } 5}{100}$

= K600

= K12 000 + K600

= K12 600

105. Find the fourth number in the following number pattern: 960, 1000. 1040, _____ 1120.

SOLUTION

To find the next number = 1 000 – 960 = 40

= add 40 to the next number

= 1040 + 40

∴ The fourth number = 1080

106. The circumference of the base of a basin is 176 cm. Calculate its radius. (Take $\pi = \frac{22}{7}$)

SOLUTION

Circumference of the base of the basin = πd

$\therefore 176 = \frac{22}{7} \times d$

$$\frac{176}{\frac{22}{7}} = \frac{\cancel{\frac{22}{7}} \times \text{diameter}}{\cancel{\frac{22}{7}}}$$

$176 \div \frac{22}{7} = \text{diameter}$

$176 \times \frac{7}{22} = d$

Diameter = 56

To find radius = ½ x diameter

= 56 ÷ 2

= 28 cm

107. Solve the inequality $g + 18 > 80$

SOLUTION

$$g + 18 > 80$$

$$g + 18 - 18 > 80 - 18$$

$$g > 62$$

108. Twenty learners got the following marks out of 5.

1 4 5 2 3 2 5 4 3 4 5 3 4 5 1 0 4 3 5 4 4 5 3 4 3

a. Present the data in a tally table

Marks	Tally	Number of learners
0	I	1
1	II	2
2	II	2
3	~~IIII~~ I	6
4	~~IIII~~ III	8
5	~~IIII~~ I	6

b. What was the mode?

Mode = 4

109. Write six hundred and one million seven thousand five hundred and twelve in figures.

SOLUTION

601 000 000
7 000
500
12

= 601 007 512

110. A parent received 40 USA dollars from a son and 50 rands from a daughter. How much in Malawi Kwacha did the parent receive?

Use the exchange rates as on 15/05/08

Currency	Buying	Selling
USA dollar	K139.10	K141.89
Rand	K 18.80	K 19.74

1 USA dollar = K139.10

∴ 40 USA dollars = more

$$= \frac{\$40 \text{ x } K139.10}{\$1}$$

= K5 564

1 rand = K18.80

∴ R50 = more

$$= \frac{R50 \text{ x } K18.80}{R1}$$

= K940

∴ The parent received = K5 564 + K940

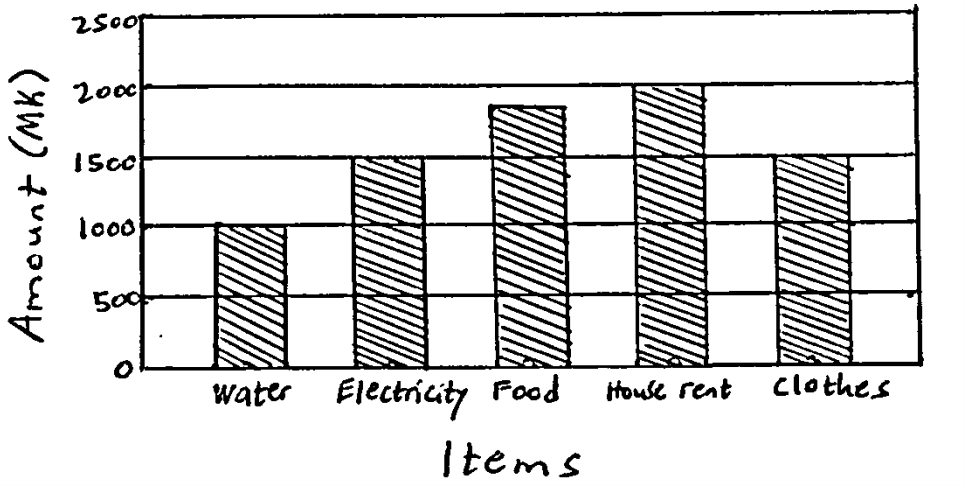
= K6 504

111. Mrs Bondo spent all her April salary as follows:

Item	**Amount**
Water	K1 000
Electricity	K1 500
Food	K1 800
House rent	K2 000
Clothes	K1 500

Using a scale of 1 cm to represent K500, draw a bar graph

A graph showing Mrs Bondo's expenditure



112. Table below shows marks scored by a learner in a mid-term test

Subject	**Marks**
Mathematics	70
English	50
Chichewa	60
Primary Science	50
Arts and Life Skills	50

Find the:

(i) mode

= 50

(ii) mean

$= \frac{70 + 50 + 60 + 50 + 50}{5}$

$= \frac{280}{5}$

= 56

113. What is the fraction of 80%?

$= \frac{80}{100}$

$= \frac{40}{50}$

$= \frac{20}{25}$

$= \frac{4}{5}$

114. Simplify $\frac{3}{7} \div \frac{5}{6} + \frac{2}{5}$

$= (\frac{3}{7} \div \frac{5}{6}) + \frac{2}{5}$

$= \frac{3}{7} \times \frac{6}{5}$

$= \frac{18}{35} + \frac{2}{5}$

$\frac{18 + 14}{35}$

$= \frac{32}{35}$

115. What is 49 in Roman numerals?

40 = XL

9 = IX

∴ 49 in Roman numerals = XLIX

= XLIX

116. A nurse worked at the hospital for two decades. How many years did she work at the hospital?

1 decade = 10 years

2 decades = 2 x 10 years

= 20 years

∴ The nurse worked for 20 years

117. The initial temperature reading on a thermometer was 30^{o} C. After being placed under the armpit of a patient, the temperature reading on the thermometer rose by 37^{o} C. What was the new reading on the thermometer?

WORKING

Initial temperature = 30^{o} C

Temperature rose by 37^{o} C

∴ The new temperature reading = 30^{o}C + 37^{o} C

= 67^{o}C

118. What name is given to the triangle whose angles are 60^{o} each?

= Equilateral triangle

119. How many trips will a bus carrying 150 passengers per trip make to transport 6 000 passengers to a celebration?

6000 ÷ 150

= 40 trips

120. In a number pattern, the first number is 26, the second number is 40 and the third number is 54. Find the fifth number

26, 40, 54 ____ __?__

To find the next number = 40 – 26 = 14

Add 14 to the next number

Fourth number = 54 + 14 = 68

Fifth number = 68 + 14 = 82

∴ The fifth number = 82

121. Add $4\frac{2}{3}$ to the product of $3\frac{1}{5}$ and $\frac{3}{4}$

$(3\frac{1}{5} \times \frac{3}{4}) + 4\frac{2}{3}$

$\frac{16}{5} \times \frac{3}{4}$

$\frac{12}{5} + 4\frac{2}{3}$

$2\frac{2}{5} + 4\frac{2}{3}$

$6\frac{6+10}{15}$

$6\frac{16}{15}$

$= 7\frac{1}{15}$

122. Chimwemwe is twice as old as Mphatso. If the sum of their ages is 36 years, find the age of Chimwemwe.

SOLUTION

Let Chimwemwe's age be 2x

Let Mphatso's age be x

The sum of Chimwemwe's and Mphatso's ages is 36 years

To find Chimwemwe's age = 2x + x = 36

$\frac{3x}{3} = \frac{36}{3}$

x = 12

Substitute x with 12

Chimwemwe's age = 2 x 12 = 24

∴ Age of Chimwemwe = 24 years

123. A man bought 5 bags of onions for K4 750. He sold two of the bags at K1 235 each and the rest at K1 084 each. He also paid K50 market fee. Calculate the profit he made.

SOLUTION

Bought 5 bags = K4 750

Sold 2 bags = K1 235 each (K1 235 x 2)

= K2 470

Sold 3 bags = K1 084 each (K1 084 x 3)

= K3 252

Total sales = K2 470 + K3 252

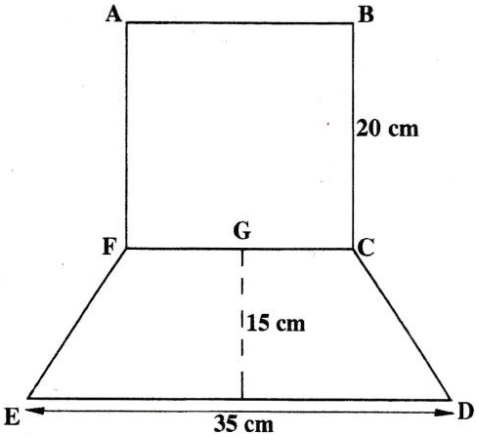
= K5 722

Paid market fee = K50

∴ The profit he made = K5 722 – K4 750 – K50

= K922

124. Figure below is a composite shape **ABCDEF** made up of a trapezium **CDEF** and a square **ABCF**.



If **BC** = 20 cm, **ED** = 35 cm and perpendicular height **GH** = 15 cm, calculate the area of the shape.

The area of the shape = area of a trapezium CDEF + area of a square ABCF

Area of a trapezium $= \frac{1}{2}$ (sum of parallel sides) x height

$= \frac{1}{2}$ (20 cm + 35 cm) x 15 cm

$= \frac{1}{2}$ x 55 cm x 15 cm

$= \frac{825}{2}$

= 412.5 cm^2

Area of a square = length x length (or L^2)

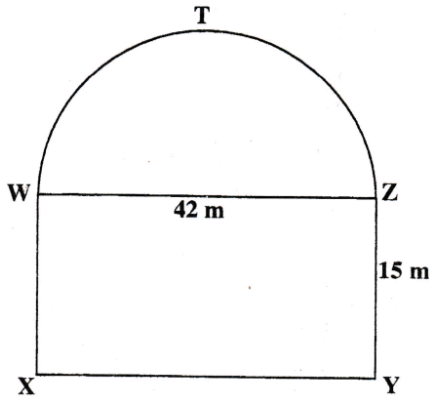
= 20 cm x 20 cm

= 400 cm^2

∴ Area of a shape = 412.5 cm^2 + 400 cm^2

= 812.5 cm^2

125. Figure below is a plan of a hall **XWTZY** composed of a rectangle **XWZY** and a semi-circle **WTZ**. **WZ** = 42 m and **ZY** = 15 m.



If **WZ** is a diameter of the semi-circle, calculate the perimeter of the hall. (Take π = $\frac{22}{7}$)

Perimeter of the hall = the sum of XWTZY

XW = 15 m (given)

WTZ = ?

ZY = 15 m (given)

YX = 42 m (given)

Perimeter of a semicircle WTZ $= \frac{1}{2}\pi d$

$= \frac{1}{2} \times \frac{22}{7} \times 42$ m

= 66 m

∴ Perimeter of the hall = 15 m + 66 m + 15 m + 42 m

= 138 m

126. A learner measured an angle and found that it was 125^{o}. What type of angle is it?

= Obtuse angle

127. A lady paid K2 280 for 4 dresses which were marked K600 each. Find the total discount that the lady was given.

Discount = marked price – selling price

= K600 x 4 – selling price

= K2 400 – selling price

= K2 400 – K2 280

= K120

128. A person celebrated his golden jubilee ten years ago. How old is he now?

Golden jubilee = 50 years

= 50 years + 10 years

= 60 years

129. If 1 cm represents 12 km, what distance in km will 5.5 cm represent?

1 cm = 12 km

5.5 cm = more

$$= \frac{5.5 \text{ cm x } 12 \text{ km}}{1 \text{ cm}}$$

= 66 km

130. A person deposited two K1000 bank notes, one K500 bank note and forty K20 bank notes. What was the total money deposited?

K1000 x 2 = K2000

K500 x 1 = K500

K20 x 40 = K800

Total money deposited = K2000 + K500 + K800

= K3 300

131. Yankho takes 2 hours and 30 minutes to walk a distance of 15 km. Calculate Yankho's speed in metres per minute.

Speed $= \frac{\text{distance}}{\text{time}}$

$= \frac{15 \text{ km}}{2.5 \text{ hours}}$

= 6 km

6 km into metres $= \frac{6 \text{ km x } 1000 \text{ m}}{1 \text{ km}}$

= 6000 m

∴ Yankho's speed in metres per minute $= \frac{6000 \text{ m}}{60 \text{ minutes}}$

= 100 metres per minute (or 100m/min)

132. The sides of a triangular piece of cloth measure 9 m, 20 m and 15 m. If it is to be decorated with ribbons around its edges, find the total length of ribbon required.

Sides of a triangular piece of cloth = 9 m, 20 m and 15 m

To find total length of ribbon to decorate the sides = 9 m + 20 m + 15 m

= 44 m

133. Calculate the total cost of the following items:
10 tomatoes at 2 for K50
3 books for K500

Cost of 10 tomatoes at 2 for K50 = $\frac{10}{2}$ x K50

= 5 x K50

= K250

Cost of 3 books for K500 = K500

The cost of the items = K250 + K500

= K750

134. Solve the equation 2t + 1 = 11 + t

2t + 1 = 11 + t (collecting like terms together)

2t – t + ~~1 – 1~~ = 11 – 1 + ~~t – t~~

t = 10

Table below shows number of pencils distributed to learners in Standards 1, 2, 3 and 4 at a certain school. Use it to answer questions 135 and 136

Class	**Tallies**
Standard 1	~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ II
Standard 2	~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ I
Standard 3	~~𝍸~~ ~~𝍸~~ IIII
Standard 4	~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ III

135. Which class received the greatest number of pencils?

= Standard 4

136. Find the difference between the number of pencils distributed in Standard 1 and Standard 2.

The difference between Standard 1 and Standard 2 = 26 pencils – 22 pencils

= 4 pencils

Table below shows property and its insurance premium paid per month. Use it to answer question 137.

Property	**Insurance premium per month** (K)
House	K9 000
Bicycle	K 750
Motor vehicle	K4 500
House furniture	K3 750

137. If a person paid a total insurance premium of K45 000 for an agreed period of 5 years for ensuring one of the property in table above, which property was insured?

Total insurance premium = K45 000 for 5 years

To find premium per month = total premium ÷ total months in 5 years

Total months in 5 years = 12 months x 5

= 60 months

$= \frac{\text{K45 000}}{\text{60 months}}$

= K750 per month

∴ The property insured in the table was a bicycle

= bicycle

138. Simplify 11.7 + 2.64 + 0.312, write your answer to 2 significant figures.

$$\begin{array}{r} 11.7 \\ 2.64 \\ +\ 0.312 \\ \hline 14.652 \\ \hline \end{array}$$

14.652 to 2 significant figures = 15

= 15

139. Calculate the difference between the LCM and the HCF of 16, 20 and 40.

2	16	20	40
2	8	10	20
2	4	5	10
2	2	5	5
5	1	5	5
	1	1	1

LCM = 2 x 2 x 2 x 2 x 5
= 80

HCF = 2 x 2
= 4

The difference between LCM and HCF = 80 – 4

= 76

140. The following were prices for the same type of handbag in different shops:
K3 700, K3 850, K3 900, K3 950, K4 000. Calculate the mean price of the handbag.

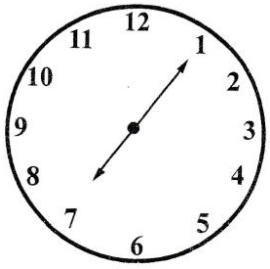
$$\text{Mean} = \frac{sum\ of\ all\ values}{number\ of\ the\ values}$$

$$= \frac{\text{K3 700} + \text{K3 850} + \text{K3 900} + \text{K3 950} + \text{K4 000}}{5}$$

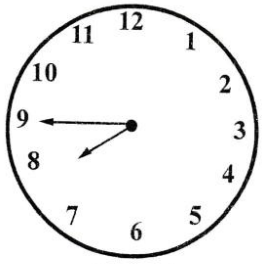
$$= \frac{\text{K19 400}}{5}$$

= K3 880

141. Figure below shows time on clock faces when Tadala and Mwayi arrived at school on a certain day.



Tadala



Mwayi

How many minutes did Tadala arrive at the school earlier than Mwayi?

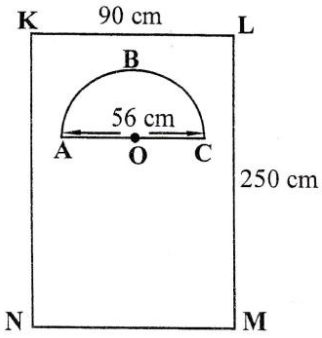
Tadala arrived at 7:05 (five minutes past 7)

Mwayi arrived at 7:45 (quarter to 8)

Difference = 7:45 – 7:05

= 40 minutes

142. Figure below shows a wooden door **KLMN** with a semicircular glass **ABC** on it, **KL** = 90 cm, **LM** = 250 cm and **AOC** = 56 cm.



Calculate the area of a wooden part of the door in square metres. (Take $\pi = \frac{22}{7}$)

Area of a wooden part of the door = area of wooden door – area of a semicircular glass

The door is rectangular

The area of a door = length x length

= 22 500 cm^2

Area of a semicircular glass = $\frac{1}{2}\pi r^2$

$= \frac{1}{2}$ x $\frac{22}{7}$ x 28 cm x 28 cm

= 1 232 cm^2

Area of a wooden part of the door = 22 500 cm^2 – 1 232 cm^2

= 21 268 cm^2

21 268 cm^2 in square metres = 21 268 ÷ 100

= 212.68 m

143. A school with 1200 learners had enough "Likuni Phala" flour for 30 days. If after 5 days, 50 more learners joined the school, how many days would the remaining flour take?

1200 learners	= Likuni Phala flour for 30 days
After 5 days	= 50 more learners joined
Remaining days	= 30 days – 5 days
	= 25 days
1250 learners	= flour could last for less than 25 days
	= $\frac{1200}{1250}$ x 25 days
	= 24 days

144. A container is $\frac{4}{7}$ full of water. If 60 litres are needed to fill it up, calculate the number of litres the container holds when it is full.

Container is $\frac{4}{7}$ full of water

Total fraction	= $\frac{7}{7}$
Remaining fraction to fill the container	= $\frac{7}{7} - \frac{4}{7} = \frac{3}{7}$
Remaining water to fill the container	= 60 litres

If $\frac{3}{7}$ = 60 litres

Then the remaining litres to fill the container = $\frac{4}{7} \div \frac{3}{7}$ x 60

= $\frac{4}{7}$ x $\frac{7}{3}$ x 60

= 80 litres

∴ The number of litres the container holds when it is full = 80 litres + 60 litres

= 140 litres

145. Table below is a picture graph showing the number of dogs killed in a certain city to control rabies.

Day	Number of dogs killed
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Key : represents five dogs

If there were 250 dogs in the city, calculate the percentage of dogs that were killed.

Number of dogs killed each day

Monday = 5 x 5 = 25 dogs

Tuesday = 5 x 10 = 50 dogs

Wednesday = 5 x 2 = 10 dogs

Thursday = 5 x 8 = 40 dogs

Friday = 5 x 4 = 20 dogs

Total number of dogs killed in 5 days = 25 dogs + 50 dogs + 10 dogs + 40 dogs + 20 dogs

= 145 dogs

If there were 250 dogs in the city

The percentage of dogs that were killed $= \frac{125}{250}$ x 100%

$= 58\%$

146. Express 45% as a ratio in its simplest form

$= \frac{45}{100}$

$= \frac{9}{20}$

= 9:20

147. Change $4\frac{5}{7}$ to an improper fraction

To change $4\frac{5}{7}$ to an improper fraction = 7 x 4 + 5 = 33

$\therefore 4\frac{5}{7}$ to an improper fraction $= \frac{33}{7}$

$= \frac{33}{7}$

148. How many fortnights are there in 56 days?

Fortnight = 14 days

Fortnights in 56 days $= \frac{56}{14}$

= 4 fortnights

149. Mary is 9 years old and John is *n* years old. If the sum of their ages is 33, how old is John?

Mary = 9 years

John = n years

Sum of years of Mary and John = 33 years

To find the age of John is 9 + n = 33

~~9 – 9~~ + n = 33 – 9

n = 24

∴ John is 24 years old

150. The average age of 9 girls is 11.3 years. If a boy joins the girls, the new average is 11.0 years. Calculate the age of the boy.

Average age of 9 girls = 11.3 years

If a boy joins, new averages = 11.0 years

To find the age of the boy = 11.0 x 10 – 11.3 x 9

= 101.7 – 110

= 8. 3

The age of the boy = 8.3 years

151. Three bells ring at intervals of 6 minutes, 9 minutes and 15 minutes. If they ring together at 6:00 am, at what time will they next ring together?

2	6	9	15
3	3	9	15
3	1	3	5
5	1	1	5
	1	1	1

LCM = 2 x 3 x 3 x 5 = 90

∴ The bell will next ring in 90 minutes

90 minutes = 1 hour 30 minutes

6:00 am + 1 hour 30 minutes = 7:30 am

= 7:30 am

152. For every three pieces of bread that James eats, Paul eats one piece. How many pieces of bread does Paul eat if they both eat a total of 100 pieces?

James eats = 3 pieces

Paul eats = 1 piece

Total pieces = 100

3p + 1p = 100

$\frac{4p}{4} = \frac{100}{4}$

p = 25

Paul eats = 1 x 25 pieces = 25 pieces

James eats = 3 x 25 pieces = 75 pieces

Total: 75 pieces + 25 pieces = 100 pieces

∴ Paul eats 25 pieces of bread

153. After a competition, Temwa received 2y kwacha and Malumbo (500 – y) kwacha. If they received K800 altogether, how much did each receive?

Temwa = 2y kwacha

Malumbo = (500 – y) kwacha

Total = K800

2y + 500 – y = 800

y + 500 = 800

y + 500 – 500 = 800 – 500

y = 300

Replace y with 300

∴ Temwa received 2 x 300 = 600 kwacha

Malumbo received 500 – 300 = 200 kwacha

154. Write the following Roman numeral DCIX in Hindu Arabic numbers

D = 500
C = 100
IX = 9

∴ DCIX = 609

155. Find the HCF of 360, 504 and 864 using continued division.

```
          1
360 ) 504
    – 360
      144

          2
144 ) 360
    – 288
      72

          2
72 ) 144
   – 144
     0

         12
72 ) 864
   – 72
     144
   – 144
     0
```

The HCF of 360, 504 and 864 is 72

156. Simplify the following: $(7\frac{1}{8}$ of $2\frac{1}{4}) - (5\frac{1}{4} \div \frac{2}{3})$

$(7\frac{1}{8}$ of $2\frac{1}{4}) - (5\frac{1}{4} \div \frac{2}{3})$

$\frac{57}{8} \times \frac{9}{4} - \frac{21}{4} \div \frac{2}{3}$

$\frac{513}{32} - \frac{21}{4} \times \frac{3}{2}$

$\frac{513}{32} - \frac{63}{8}$

$16\frac{1}{32} - 7\frac{7}{8}$

$9\frac{1-28}{32}$

$8\frac{32+1-28}{32}$

$8\frac{33-28}{32}$

$8\frac{5}{32}$

157. Divide the product of 1.4 and 2.4 by 0.6

$$\begin{array}{r} 1.4 \\ \times\ 2.4 \\ \hline 56 \\ 28 \\ \hline 3.36 \\ \hline \end{array}$$

3.36 ÷ 0.6

Removing decimal points: 3.36 becomes 336

0.6 becomes 60

$$
\begin{array}{r|l}
 & 5.6 \\
\hline
60 & 336 \\
 & -300 \\
\hline
 & 360 \\
 & -360 \\
\hline
 & 0
\end{array}
$$

= 5.6

158. How long will a journey of 460 km take to travel at a speed of 92 km/hr?

Time = $\frac{\text{distance}}{\text{speed}}$

Time = $\frac{460\text{km x hr}}{92\text{ km}}$

Time = 5 hours

159. If 40 bags of fertilizer are used on 2 400 hectares of land, how many bags are needed for 5 400 hectares?

2400 hectares = 40 bags

5400 hectares = ? (more)

$\frac{5400}{2400}$ x 40 bags

= 90 bags

160. The product of two numbers is 288. One of the numbers is the difference between 11 and 2. Find the other number.

Let the two numbers be y and z

y x z = 288

One of the numbers = 11 – 9 = 9

Let y = 9

To find the value of z = 9 x z = 288

$$= \frac{9}{9} \times z = \frac{288}{9}$$

$$z = 32$$

∴ The other number = 32

Table below shows body temperatures for five patients. Use it to answer questions 161 and 162

Patient	**Body Temperature (°C)**
P	39.2
Q	38.4
R	37.6
S	36.5
T	38.0

161. Which patient had the highest body temperature?

= P

162. A patient is tested for malaria if the body temperature is greater than 38°C. How many patients were tested for malaria?

= 2 patients

163. The following are heights of five buildings in a certain city:

18 m, 17 m, 12 m, 18 m, 16 m

What is the median height of the buildings?

WORKING

12 m, 16 m, 17 m, 18 m, 18 m

Median = 17 m

164. A girl gave $\frac{3}{4}$ of \$600 to her brother. What is the value of the remaining dollars in Malawi Kwacha? (\$1 = MK700)

SOLUTION

$\frac{3}{4}$ of \$600 = $\frac{3}{4}$ x \$600

= \$450

Remaining dollars = \$600 – \$450

= \$150

Remaining dollars in Malawi kwacha

\$1 = MK700

\$150 = (more)

$= \frac{\$150 \text{ x } K700}{\$1}$

= K105 000

165. A cell phone was marked K8 000. If a discount of K450 was given, find the selling price.

Marked price = K8 000

Discount = K450

To find selling price = marked price – discount

= K8 000 – K450

= K7 550

Table below shows postal charges for sending newspapers within Malawi. Use it to answer questions 166 and 167

Item	Mass of Item	Postal Charge
Newspaper	up to 20 g	K360
	above 20 g up to 100 g	K820
	above 100 g up to 250 g	K1180
	above 250 g up to 500 g	K1560
	above 500 g up to 1000 g	K2600
	above 1000 g up to 2000 g	K3840

166. How much would a person pay to send a newspaper weighing 21 g?

The mass 21 g is in the section of above 20 g up to 100 g

Therefore a person would pay K820

167. What would be the total postal charge for newspapers of mass 240 g and 999 g?

Mass 240 g is in the section of above 100 g up to 250 g = K1180

Mass 999 g is in the section of above 500 g up to 1000 g = K2600

Total postal charge = K1180 + K2600

= K3780

168. Find the simple interest to be paid on a loan of K24 000 for 3 years at 10% per annum.

Simple interest $= \frac{\text{PTR}}{100}$

$= \frac{\text{k24000 x 3 x 10}}{100}$

= K7 200

169. Solve the equation $2x + 3x – 4x – 7 = 1$

$2x + 3x – 4x – 7 = 1$

$5x – 4x – 7 = 1$

$x – 7 = 1$

$x – 7 + 7 = 1 + 7$

$x = 8$

170. A family has three meals in a day. During each meal, 250 ml of milk is used. How many days will the family take to use 3 000 ml of milk?

Meals per day	= 3
Milk used each meal	= 250 ml
Milk used per day	= 250 ml x 3
	= 750 ml
Total milk	= 3000 ml

To find how many days the family will use 3000 ml of milk = total milk ÷ milk used per day

3000 ml ÷ 750 ml/day

= 4 days

171. Form an inequality from the following statement and solve it. 5 subtracted from x is greater than 18.

ANSWER

$x – 5 > 18$

$x – 5 + 5 > 18 + 5$

$x > 23$

172. Simplify $2\frac{2}{9}$ x $(3\frac{3}{4} - 1\frac{5}{8}) \div 1\frac{1}{3}$

WORKING

$2\frac{2}{9}$ x $(3\frac{3}{4} - 1\frac{5}{8}) \div 1\frac{1}{3}$

$2\frac{6-5}{8}$

$2\frac{2}{9}$ x $2\frac{1}{8} \div 1\frac{1}{3}$

$\frac{20}{9}$ x $\frac{17}{8} \div \frac{4}{3}$

$\frac{\cancel{20}^{5}}{\cancel{9}_{3}}$ x $\frac{17}{8}$ x $\frac{\cancel{3}^{1}}{\cancel{4}_{1}}$

$= \frac{85}{24}$

$= 3\frac{13}{24}$

173. The commission charged for sending money by fast cash money transfer is 10%. If Titani sent K20 500 to his mother by fast cash money transfer, calculate the:

(i) Commission paid

Commission on fast cash money transfer = 10%

∴ 10% commission of K20 500 = K20 $\cancel{500}$ x $\frac{10}{\cancel{100}}$

= K205 x 10

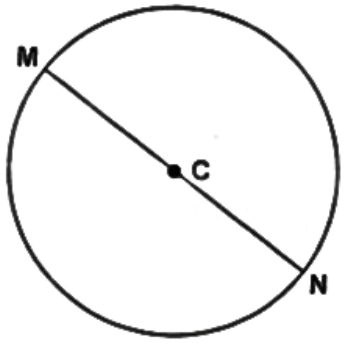
= K2 050

(ii) Total money that Titani paid the post office

Total money Titani paid = K20 500 + K2 050

= K22 550

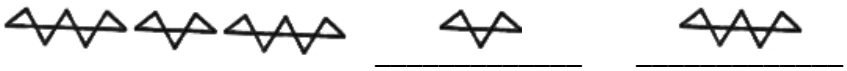
174. Figure below shows a circle with centre **C**. **M** and **N** are points on the circumference of the circle.



What name is given to the straight line **MCN**?

= diameter

175. Complete the following pattern in two blank spaces below:



176. Add 84.04 + 22 + 0.55 + 8

$$\begin{array}{r} 84.04 \\ 22 \\ 0.55 \\ +\ 8 \\ \hline 114.59 \\ \hline \end{array}$$

177. Mphatso bought 5 metres of cloth at K750 per metre, 18 bananas at 3 for K100 and $3\frac{1}{2}$ kg rice at K480 per kg. Prepare a bill for Mphatso.

Working

5 metres of cloth at K750 per metre = K750 x 5 = K3 750

18 bananas at 3 for K100	= $\frac{18}{3}$ x K100	= K 600
$3\frac{1}{2}$ kg rice at K480 per kg	= $\frac{7}{2}$ x K480	= K1 680
		K6 030

∴ Bill for Mphatso = K6 030

178. A person paid K420 000 as a custom duty for goods bought. If the rate of the custom duty was $52\frac{1}{2}$ %, find the value of the goods.

Working

Custom duty for goods bought	= K420 000
Rate of custom duty	= $52\frac{1}{2}$%
Value of the goods	= ? (more)
	= $\frac{100}{52.5}$ x K420 000
	= K800 000

179. Draw a half turn angle



180. A circular ground has a diameter of 28.7 m. Calculate the length of wire that could be used to fence the ground. (Take $\pi = \frac{22}{7}$).

Working

Diameter of a circular ground	= 28.7 m
To calculate the length of wire to fence the ground	= circumference of a circle
Circumference of a circle	= πd

$= \frac{22}{7}$ x 28.7 m

= 90.2 m

181. A minibus left Blantyre at 11:30 am and reached Dedza at 3:00 pm on the same day. If it was travelling at an average speed of 60 km/h, calculate the distance covered.

Working

11:30 am to 3:00 pm (on the same day) $= 3\frac{1}{2}$ hours

Average speed = 60 km/h

To calculate distance = speed x time

$= 60 \quad x \quad 3\frac{1}{2}$

$= \frac{^{30}\cancel{60}\ km}{\cancel{hr}} \quad x \quad \frac{7\ \cancel{hr}}{\cancel{2}_{1}}$

∴ Distance = 210 km

182. The value of a sofa set went down by 12% to K132 000 after one year. Find the original value of the sofa.

Working

Original value = 100%

Value of K132 000 = 100% - 12%

= 88%

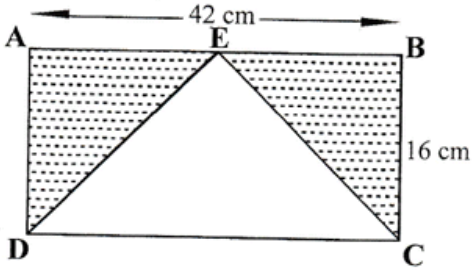
To find original value $= \frac{100}{88}$ x K132 000

= K150 000

183. Represent the number 18 in a tally form.

= 𝍸 𝍸 𝍸 III

184. Figure below is a rectangle **ABCD** with triangle **CDE** inside it.



If **AB** = 42 cm and **BC** = 16 cm, calculate the area of the shaded part.

Working

Area of the shaded part = area of a rectangle – area of a triangle

Area of a rectangle = length x width

= 42 cm x 16 cm

= 672 cm^2

Area of a triangle = $\frac{1}{2}$ x base x height

= $\frac{1}{2}$ x 42 cm 16 cm

= $\frac{672}{2}$

= 336 cm^2

Area of the shaded part = 672 cm^2 – 336 cm^2

= 336 cm^2

185. Table below shows the results of a Science test for 60 learners.

Marks	Percentage of learners
From 60 and above	10 %
From 50 to 59	20 %
From 40 to 49	40 %
From 20 to 39	20 %
From 19 and below	10 %

a. Find the number of learners who had marks from 40 to 49

Working

Marks from 40 to 49 are along 40% of learners

40% of 60 learners

$\frac{40}{100}$ x 60 learners

= 24 learners

b. Find the total number of learners who had marks greater than 49

Working

Total number of learners who had marks greater than 49 is along marks:

From 50 to 59 = 20%

From 60 and above = 10%

20% 0f 60 learners = $\frac{20}{100}$ x 60

= 12 learners

10% of 60 learners = $\frac{10}{100}$ x 60

= 6 learners

Total number of learners = 12 learners + 6 learners

= 18 learners

186. What is a period of 5 years called?

= Instrum

187. Bina and Chiko shared pens in the ratio 2:3 respectively. If Chiko got 18 pens, what is the total number of pens?

Working

To find total number of pens = Bina's share + Chiko's share

Bina and Chiko shared pens in the ratio 2:3

Chiko's share = 18 pens

Bina's share = ? (less)

To find Bina's share $= \frac{2}{3}$ x 18

Bina's share = 12 pens

Total number of pens = 12 pens + 18 pens

= 30 pens

188. A pair of trousers marked at K6 500 was sold at K5 850. What was the discount percentage?

Working

Marked price = K6 500

Selling price = K5 850

Discount given = K6 500 – K5 850

= K650

Discount percentage $= \frac{\text{discount x } 100\%}{\text{marked price}}$

$= \frac{\text{K650 x } 100\%}{\text{K6500}}$

= 10%

189. The total mass of tin with water in it is 35.72 g. If the mass of the water only is 28.36 g, what is the mass of the tin?

Working

Total mass of tin with water in it = 35.72 g

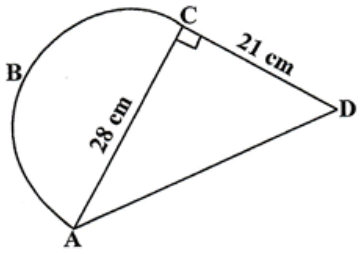
Mass of water only = 28.36 g

To find mass of the tin = total mass of tin with water – mass of the water only

= 35.72 g – 28.36 g

= 7.36 g

190. Figure below is a composite shape made up of a semicircle **ABC** and a right angled triangle **ACD**. **AC** = 28 cm, **CD** = 21 cm and angle **ACD** = 90°.



Calculate the total area of the shape (Take $\pi = \frac{22}{7}$)

Working

The total area of the shape = area of a semicircle + area of a triangle

Area of a semicircle $= \frac{1}{2}\pi r^2$

$= \frac{1}{2} \times \frac{22}{7} \times 14 \text{ cm} \times 14 \text{ cm}$

$= 308 \text{ cm}^2$

Area of a triangle $= \frac{1}{2} \times$ base x height

$= \frac{1}{2} \times 28 \text{ cm} \times 21 \text{ cm}$

$= 294 \text{ cm}^2$

Total area of the shape = $308 \text{ cm}^2 + 294 \text{ cm}^2$

$= 602 \text{ cm}^2$

191. What is sixty eight million two hundred and one thousand and one in figures?

= 68 201 001

192. What is the value of *y* in the equation *4y – 8 = 20*?

Working

4y – 8 = 20

4y – 8 + 8 = 20 + 8

$\frac{4y}{4} = \frac{28}{4}$

y = 7

193. What is 999 500 tambala in kwacha and tambala?

WORKING

100t = K1

999 500t = ? (more)

K1 x $\frac{999500t}{100}$

= K9995 00t

194. A diagram of a plant 8 cm long was drawn using a scale of 1 cm representing 2 cm. What was the length of the plant?

Working

1 cm represents 2 cm

∴ 8 cm = ? (more)

∴ Length of the plant = $\frac{2}{1}$ x 8 cm

= 16 cm

195. Decrease 80 by 20%

Working

= 80 – (20% of 80)

= 80 – $\frac{20}{100}$ x 80

= 80 – 16

= 64

or

= 80 x (100% - 20%)

= 80 x $\frac{80}{100}$

= 8 x 8

= 64

196. Chikondi bought 3 postal orders for K210. What was the cost of one postal order?

Working

3 postal orders = K210

1 postal order = ? (less)

= $\frac{1}{3}$ x K210

= K70

197. The perimeter of a rectangular garden is 62 m. If the length of the rectangle is 17 m, what is its width?

Working

Perimeter of a rectangle = (2 x L) + (2 x W)

62 m = (2 x 17 m) + (2 x W)

62 m – 34 m = 34 m – 34 m + (2 x W)

$\frac{28\ m}{2}$ = $\frac{2 \times W}{2}$

14 m = W

∴ Width = 14 m

198. What is 2 472 to the nearest thousand?

= 2000

199. A company paid K400 000 as customs duty for a machine worth K1 600 000. At what rate was the custom duty charged?

Working

$= \frac{400\ 000}{1\ 600\ 000}$ x 100%

= 25%

200. Convert 2 days 5 hours 10 minutes to minutes

Working

2 days = 48 hours

48 hours + 5 hours = 53 hours

$= \frac{53 \text{ hours x } 60 \text{ minutes}}{1 \text{ hour}}$

= 3 180 minutes + 10 minutes

= 3 190 minutes

201. Simplify 1.1 x 0.02 ÷ (3.65 + 1.35)

Working
1.1 x 0.02 ÷ (3.65 + 1.35)

1.1 x 0.02 ÷ 5

0.022 ÷ 5

= 0.0044

202. A doctor recorded temperatures of a patient at different intervals as follows: 36.0^{o}C, 36.2^{o}C, 37.7^{o}C and 38.1^{o}C. Calculate the mean temperature.

Working

$$\frac{36.0^{o}C + 36.2^{o}C + 37.7^{o}C + 38.1^{o}C}{4}$$

$$= \frac{148}{4}$$

$$= 37^{o}C$$

203. What is DXLIX in Hindu Arabic numeral?

Working
DXLIX
D = 500
XL = 40
IX = 9

∴ DXLIX = 549

204. A child had *2a + b* guavas. If she received *10 + a* other guavas, find the total number of guavas she had.

Working

2a + b + 10 + a

= 2a + a + b + 10

= 3a + b + 10

205. In a number pattern, the first number is 540, the second is 180 and the third is 60. Calculate the fourth number

Working

540 180 60 __?__

To find the next number = 540 ÷ 180

= 3

= divide by 3

Therefore (∴) the fourth number = 60 ÷ 3

= 20

206. Table below shows Mama's budget for the month of February 2020.

Item	**Quantity**	**Cost for one item (K)**	**Amount (K)**
Sugar	5 packets	850.00	4 250.00
Cooking oil	3 bottles	1 200.00	
Soap	2 units		1 600.00

a. Complete the table

Working

Cooking oil 3 bottles @ K1200 each = K1200 x 3 = K3 600

Soap 2 units for K1600 = K1600 ÷ 2 = K800

Item	**Quantity**	**Cost for one item (K)**	**Amount (K)**
Sugar	5 packets	850.00	4 250.00
Cooking oil	3 bottles	1 200.00	**3 600.00**
Soap	2 units	**800.00**	1 600.00

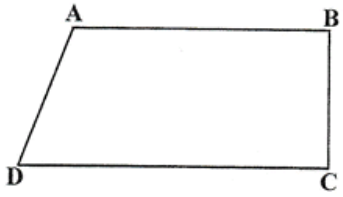
b. Find the total cost for Mama's Budget

Working

Total cost = K4 250.00 + K3 600.00 + K1 600.00

= K9 450.00

207. Figure below shows a trapezium **ABCD**



Which **two** sides are parallel to each other?

= AB and DC

208. Write the following Mathematical statement **correctly**: the sum of *y* and 5 is less than or equal to 11

= $y + 5 \leq 11$

209. A tank measuring 5m long, 4m wide and 3m deep is half full of water. Calculate the volume of water in the tank.

Working

Volume = length x breadth x height

= 5m x 4m x 3m

= $60m^3$

Tank is half full of water, therefore volume of the tank = $60m^3 \div 2$

= $30m^3$

210. Find the HCF of 540 and 1720 using continued division

5	540	1720	3
	500	1620	
2	40	100	2
	40	80	
	0	20	

∴ HCF = 20

211. A person bought 20 units of fruits for K2 000 and sold them at a profit of K50 each. Calculate the selling price of each fruit.

Working

20 units = K2000

20 units sold at a profit of K50 each

Profit = 20 units x K50

= K1000

Selling price for each unit $= \frac{\text{K3000 x K50}}{\text{K1000}}$

= K150

To find selling price for each fruit per unit $= \frac{K150}{10}$

= K15

Or

Total number of fruits = 20 x 10

= 200 fruits

(NOTE: Unit = 10. There are 20 units)

We have to divide cost price (K2000) + profit (K1000) by the number of total fruits (200) to find the selling price for each fruit)

K3000 ÷ 200

= K15

212. Increase 700 by 11%

Working

700 by 11%

= 700 + (11% of 700)

= 700 + $\frac{11}{100}$ x 700

= 700 + 77

= 777

or

= 700 x (11% + 100%)

= $\cancel{700}$ x $\frac{111}{\cancel{100}}$

= 7 x 111

= 777

Chimwemwe made the following transactions in March 2020.

March 1 Balance in bank K10 000
March 2 Banked K 5 000
March 18 Withdrawal K 3 000
March 29 Received cheque K 4 000

Use this information to answer questions 213 and 214

213. If bank account for Chimwemwe's transactions was to be prepared, which transaction would be entered under expenditure?

= Withdrawal

214. How much money at the bank would Chimwemwe have as at 31 March 2020?

Chimwemwe's Bank Account

Dr Cr

Date	Income	Amount	Date	Expenditure	Amount
1 March	Cash in bank	K10 000	18 March	Withdrawal	K 3000
2 March	Banked	K 5 000			
29 March	Received cheque	K 4 000	30 March	Balance c/d	K16 000
		K19 000			K19 000
31 March	Balance b/d	K16 000			

= K16 000

215. There are 180, 126 and 162 learners in standards 3, 4 and 5 respectively. Find the highest number of learners that can be put in a group for each of the classes to have the same group sizes.

2	180	126	162
2	90	63	81
3	45	63	81
3	15	21	27
3	5	7	9
3	5	7	3
5	5	7	1
7	1	7	1
	1	1	1

The highest number = 2 x 3 x 3

= 18 learners

216. A lady spends $\frac{2}{5}$ of her salary on food, $\frac{1}{6}$ on house rent and the remaining K26 000 on clothes. Calculate her monthly salary.

Working

Her monthly salary $= \frac{2}{5} + \frac{1}{6} +$ K26000

Salary on food and house rent $= \frac{2}{5} + \frac{1}{6}$

$= \frac{12+5}{30}$

$= \frac{17}{30}$

Salary on clothes $= \frac{30}{30} + \frac{17}{30}$

$= \frac{13}{30}$

$\frac{13}{30}$ = K26 000

$\frac{17}{30}$ = ? (more)

But $\frac{1}{30}$ = $\frac{26000}{13}$

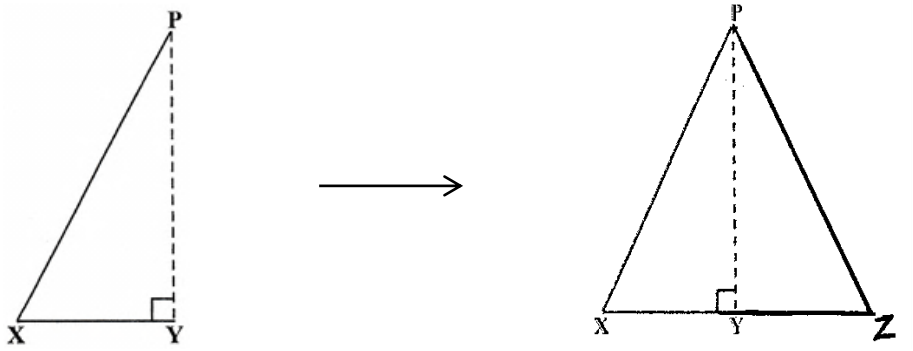
= K2000

Then $\frac{17}{30}$ = K2000 x 17

= K34 000

∴ Her salary = K34 000 + K26 000 = K60 000

217. Figure below shows part **PXY** of an equilateral triangle **PXZ** in which **PY** is a line of symmetry.



Uncompleted triangle **PXZ** Completed triangle **PXZ**

Using a ruler and a protractor complete the shape to form triangle **PXZ**

NOTE: During examinations, do not draw the uncompleted triangle but just draw the remaining part of the triangle (you are requested to draw)

Table below shows marks and number of learners represented in a tally form.

Marks (%)	**Tally**
10	////
20	~~///~~ //
30	//
40	~~///~~ ///

Use the table to answer questions 218 and 219

218. What was the modal mark?

Working

10 10 10 10 20 20 20 20 20 20 20 30 30 40 40 40 40 40 40 40 40

Modal mark = 40

219. What was the median mark?

Median mark = 20

Table below shows selection results for a certain primary school. Use it to answer questions 220 and 221

Class	Number of pupils selected
8A	$\frac{1}{2}$ of the class
8B	$\frac{2}{3}$ of the class
8C	$\frac{5}{12}$ of the class
8D	$\frac{3}{4}$ of the class

220. If each class had the same number of pupils, which class had the smallest number of pupils selected?

Suppose the total number = 200 learners each class

8A = 200 x $\frac{1}{2}$ = 100 learners

8B = 200 x $\frac{2}{3}$ = 133 learners

8C = 200 x $\frac{5}{12}$ = 83 learners

8D = 200 x $\frac{3}{4}$ = 150 learners

∴ The class which had the smallest number of pupils selected is 8C

= 8C

221. The number of girls selected from 8C was 15. What was the number of boys selected from the class if there were a total of 60 pupils in the class?

Working

Total number of pupils in 8C = 60

Total number of pupils selected from 8C = 60 x $\frac{5}{12}$

= 25

Girls selected = 15

Therefore the number of boys selected from 8C = 25 – 15

= 10

222. After spending 0.75 of her money, Mary had K600 left. How much did she have at first?

Working

0.75 = $\frac{3}{4}$ of money used

∴ K600 = $\frac{1}{4}$ (left of the money used)

To find the money used = $\frac{3}{4} \div \frac{1}{4}$ x K600

= $\frac{3}{4}$ x $\frac{4}{1}$ x K600

= $\frac{3}{1}$ x K600

= K1800

At first she had = K1800 + K600

= K2400

223. During a one hour radio programme there were 18 minutes of talking and the rest was music. What percentage of the programme was music?

Working

1 hour = 60 minutes

18 minutes = talking

Music = 60 minutes – 18 minutes

= 42 minutes

Percentage of music = $\frac{42}{60}$ x 100

= 70%

224. What is the place value of 6 in 82.694?

Working

o . t h th

82. 6 9 4

Therefore the place value of 6 = tenths

225. Add seventy nine thousand and fourteen to one thousand nine hundred

Working

seventy nine thousand and fourteen = 79014
one thousand nine hundred = 1900

$$\begin{array}{r} 79014 \\ +1900 \\ \hline 80914 \end{array}$$

226. Evaluate 456 – 610 + 544

Working

456 – 610 + 544

= 456 + 544 – 610

= 1000 – 610

= 390

227. Express 198059 to the nearest hundred

= 198100

228. Decrease 910 in the ratio 5:7

Working

$= \frac{910 \times 5}{7}$

= 650

229. If 48 m^3 of water is stored in a rectangular tank 6 m long and 4 m wide, calculate the height of the level in the tank?

Working

Volume = length x width x height

48 m^3 = 6 m x 4 m x height

48 m^3 = 24 m x height

$\frac{\cancel{48}}{\cancel{24}} = \frac{\cancel{24}}{\cancel{24}}$ x height

2 = height

∴ height = 2 m

Or

Height = 6 x 4

= 24

= 48 ÷ 24

= 2 m

230. Solve the equation *4p – 3p – 6 = 10*

Working

4p – 3p – 6 = 10

4p – 3p – 6 + 6 = 10 + 6

P = 16

231. The following were test marks for a mathematics class:
10, 11, 11, 12, 12, 13, 16, 18, 19, 19.
If the teacher took the average as the pass mark, how many pupils passed the test?

Working

$= \frac{10 + 11 + 11 + 12 + 12 + 13 + 16 + 18 + 19 + 19}{10}$

$= \frac{141}{10}$

= 14.1

Pupils with marks 14.1 and above = 4

= 4 pupils

232. Mphatso contributed K50, Chisomo contributed K150 and Mtisunge contributed K200 towards buying a goat. They sold the goat at K1 200 and shared the money in the ratio of their contributions. Calculate Chisomo's share.

Working

Total contribution for buying a goat = K400

Chisomo's ratio in buying a goat $= \frac{150}{400}$

$= \frac{3}{8}$

Chisomo's share after selling a goat $= \frac{3}{8}$ x K1200

= K450

233. Find the cost of 250 g of beans at K80.00 per kg?

Working

250 g = $\frac{1}{4}$ of 1 kg

= $\frac{1}{4}$ of K80

= $\frac{1}{4}$ x K80

= K20

234. A man earns a salary of K7 500 a month. He pays income tax at the rate of 10t in every kwacha. How much does he receive after deducting tax?

Working

Tax = $\frac{K7500 \text{ x } 10t}{100t}$

= K750

After deducting tax a man receives = K7500 – K750

= K6 750

235. A district has 94 000 people. If the population increases at the rate of $4\frac{1}{2}$ % per year, calculate the number of people after 6 months.

Working

Rate per year = $\frac{94\ 000 \text{ x } 4.5}{100}$

= 4230

Rate after six month = 4230 ÷ 2

= 2115

Population after six month = 94 000 + 2115

= 96 115

236. A woman gives $\frac{1}{4}$ of a cake to her daughter, $\frac{1}{6}$ to her son and $\frac{1}{3}$ to her husband. What fraction of the cake is left?

Working

Total fraction $= \frac{4}{4}$

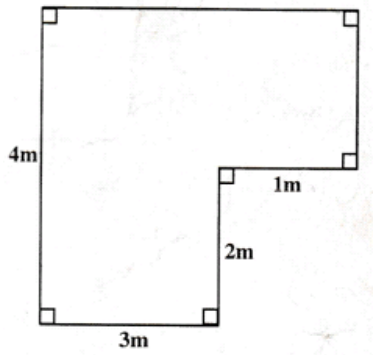
Fraction of the cake left $= \frac{4}{4} - \frac{1}{4} - \frac{1}{6} - \frac{1}{3}$

$= \frac{24-6-4-8}{24}$

$= \frac{6}{24}$

$= \frac{1}{4}$

237. Figure below shows the floor of a house.



Calculate the perimeter of the floor

Perimeter = sum of all sides

= 4 m + 3 m + 2 m + 1 m + 2 m + 4 m

= 16 m

238. A machine uses 850 millilitres of diesel in 1 minute. How many litres does it use in $1\frac{1}{3}$ hours?

Working

1 minute = 850 millilitres

$1\frac{1}{3}$ hours = ? (more)

$1\frac{1}{3}$ hours = $1\frac{1}{3}$ x 60

= $\frac{4}{3}$ x 60 minutes

= 80 minutes

= 80 x 850

= 68 000 millilitres

In litres = $\frac{68\ 000}{1000}$

= 68 litres

239. Find the largest number of people who could share equally 56 goats, 72 chickens and 108 cows

Working

2	56	72	108
2	28	36	54
2	14	18	27
3	7	9	27
3	7	3	9
3	7	1	3
3	7	1	1
7	1	1	1

The highest number = 2 x 2

= 4 people

240. Evaluate 2.6 ℓ + 0.52 ℓ + 30 ℓ

Working

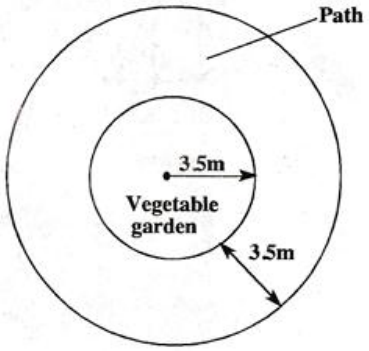
2.6 ℓ

0.52 ℓ

+ 30 ℓ

33.12 ℓ

241. Figure below is a diagram of a circular vegetable garden with radius 3.5 metres. The garden is surrounded by a path which is 3.5 metres wide.



Find the area of the path. (Take $\pi = \frac{22}{7}$)

Area of the path = area of the outside circle – area of the garden (inside)

$= \frac{22}{7}$ x 7 m x 7 m – $\frac{22}{7}$ x 3.5 m x 3.5 m

= 154 m – 38.50 m

= 115.50 m

242. A train is supposed to start off from Limbe at 11:58 am and to reach Makhamba at 1:49 pm. If it arrives 22 minutes late, how long did the journey take?

Working

From 11:58 am to 12:58 pm = 1 hour (60 minutes)

From 12:58 pm to 1:49 pm = 51 minutes

Therefore from 12:58 to 1:49 pm = 1 hour 51 minutes

But the train arrives 22 minutes late

1 hour 51 minutes + 22 minutes

= 2 hours 13 minutes (2 h 13 min)

243. Simplify (0.112 ÷ 5.6) x 4.2

Working

(0.112 ÷ 5.6) x 4.2

= (0.112 x 1000 ÷ 5.6 x 1000) x 4.2

= (112 ÷ 5600) x 4.2

= 0.02 x 4.2

= 0.084

244. Simplify $\frac{6.3}{0.9 \text{ x } 0.7}$

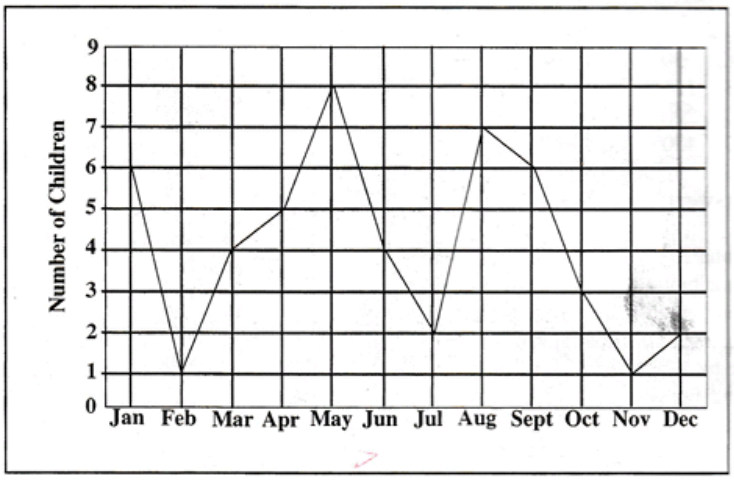
Working

$= \frac{6.3}{0.9 \text{ x } 0.7}$

$= \frac{6.3}{0.63}$

= 10

Figure below is a line graph showing the number of children born every month in 2001 at a certain hospital. Use it to answer questions 244 and 246



245. Which month had the highest number of births?

= May

246. What was the average number of children born during the months of May and June?

Working

May = 8

June = 4

Average $= \frac{12}{2}$

= 6

147. Give any **one** property of equilateral triangle

= all sides are equal

or

= all angles are equal

148. Evaluate 958 – 556 + 785

Working

958 – 556 + 785

= 958 + 785 – 556

= 1743 – 556

= 1187

149. Mention the unit measurement of capacity

= litre

150. Convert 5 km to metres

Working

1 km = 1000 m

5 km = $\frac{5 \text{ x } 1000\ m}{1}$

= 5000 m

5 km is 5000 m

151. There are 8 teachers and 376 learners at a school. Find the ratio of teachers to their learners in its simplest form.

Working

The ratio of teachers to learners = 8:376

= $\frac{8}{376}$

= 1:47

Table below shows the charges for sending a telegram. Use it to answer question 152.

Charges for internal telegram
Rate per word – K30.00

MANAGER MBALA ESTATE BOX 12 ZOMBA THIS TERM ENDS ON 10 DECEMBER PLEASE SEND TRANSPORT MONEY ZIONE TEBULO

152. How much did she pay for the telegram?

Working

Number of words = 18

Rate per word = K30.00

Total cost = 18 x K30.00

= K540

153. Simplify $2\frac{1}{2} \div 1\frac{1}{4} \times \frac{1}{3}$

Working

$2\frac{1}{2} \div 1\frac{1}{4} \times \frac{1}{3}$

$= \frac{5}{2} \div \frac{5}{4} \times \frac{1}{3}$

$= \frac{\overset{1}{\cancel{5}}}{\underset{1}{\cancel{2}}} \times \frac{\overset{2}{\cancel{4}}}{\underset{1}{\cancel{5}}} \times \frac{1}{3}$

$= \frac{2}{3}$

154. How many K500 notes are there in K8 000?

Working

= K8000 ÷ K500

= 16

155. Express 4 997 to the nearest 10

= 5000

156. The temperature of a certain area was 68^{o}C less than the boiling point of water. If the boiling point of water is 100^{o}C, find the temperature of the area.

Working

= 100^{o}C – 68^{o}C

= 32^{o}C

157. Fire destroyed 96% of books in a library. If 200 books were not burnt, calculate the original number of books in the library.

Working

Total books = 100%

Books destroyed = 96%

Books not burnt = 200

Percentage of books not burnt = 100% - 96%

= 4%

To find the number of books burnt = $\frac{\overset{24}{\cancel{96}}}{\underset{1}{\cancel{4}}}$ x 200

= 24 x 200

= 4800

Original number of books in the library = 200 + 4800

= 5000 books

158. Convert **LXIV** to Hindu-Arabic

Working

LX = 60

IV = 4

LXIV = 64

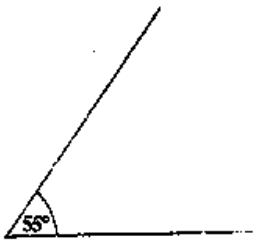
159. Express 540^{o} in right angles

Working

$= \frac{540}{90}$

= 6

Figure below shows a type of an angle. Use it to answer question 160.



160. What name is given to the type of the angle in the figure above?

= Acute angle

161. Mary goes to a school that starts at 7:30 am. One day she arrived at the school 35 minutes late. At what time did she get there?

Working

School starts = 7:30 am

Mary arrived 35 minutes late

7:30 + 35 minutes

= 8:05 am

162. There are *x* guavas in a basket. If 15 more are added to get 45 guavas, how many guavas were in the basket?

Working

$x + 15 = 45$

$x + 15 - 15 = 45 - 15$

$x = 30$

There were 30 guavas in the basket

163. Find the next group of objects in the following geometric pattern:

△ □ □ △ △ □ □ □ △ △ △ □ □ □ □

Working

△ △ △ △ □ □ □ □ □

164. Write **correct** inequality for the following statement: The sum of *x* and 5 is less than or equal to 4.

$= x + 5 \leq 4$

165. Calculate the volume of a cuboid which has the measurements of 12 cm by 7 cm by 4 cm

Working

Volume = L x W x H

= 12 cm x 7 cm x 4 cm

= 336 cm^3

166. Mrs Phiri's son was born during her silver jubilee. If the son is now 22 years, how old is Mrs Phiri?

Working

Silver jubilee = 25 years

Mrs Phiri's son = 22 years

∴ Mrs Phiri's age = 25 years + 22 years

= 47 years

167. Simplify 0.12 – 0.02 x 0.65

Working

0.12 – (0.02 x 0.65)

$$\begin{array}{r} 0.02 \\ \times\ 0.65 \\ \hline 010 \\ 012 \\ 000 \\ \hline 0.0130 \end{array}$$

$$\begin{array}{r} 0.12 \\ -\ 0.0130 \\ \hline 0.1070 \end{array}$$

168. A vendor has property worth K1 500 000.00 and would like to insure it against fire. If the premium rate is at $7\frac{1}{2}$ %, calculate the premium paid.

Working

$= \frac{1\ 500\ 000 \text{ x } 7.5}{100}$

= K15 000 x 7.5

= K112, 500

169. Solve the equation *120 + 3n + 260 – n = 450*

Working

120 + 3n + 260 – n = 450

3n – n + 120 + 260 = 450

2n + 380 – 380 = 450 – 380

$\frac{2n}{2} = \frac{70}{2}$

n = 35

170. In a number pattern, the first number is 26, the second number is 40 and the third number is 54. Calculate the **fifth** number.

Working

26, 40, 54, _____, __?__

40 – 26 = 14

Add 14 to the next number

54 + 14 = 68

68 + 14 = 82

The fifth number is 82

171. A shirt was sold for K2 000.00. If it was sold at a profit of 25%, calculate the cost price.

Working

Selling price = cost price + profit

= 100% + 25%

If 125% = K2 000

∴ 100% = ? less

Cost price = $\frac{100 \text{ x } K2000}{125}$

= K1 600

172. Find the circumference of a circle whose radius is 28 cm. (Take $\pi = \frac{22}{7}$)

Working

Radius = half of a diameter

Radius given = 28 cm

Therefore diameter = 28 x 2

= 56 cm

Circumference of a circle = πd

= $\frac{22}{7}$ x 56 cm

= 176 cm

173. Table below shows number of fish caught during a week.

Day	**Number of fish**
Monday	100
Tuesday	80
Wednesday	120
Thursday	40
Friday	60

Using the symbol  to stand for 20 fish, draw a picture graph to represent this information

Working

Monday: 100 ÷ 20 = 5 (represented by 5 fish)

Tuesday: 80 ÷ 20 = 4 (represented by 4 fish)

Wednesday: 120 ÷ 20 = 6 (represented by 6 fish)

Thursday: 40 ÷ 20 = 2 (represented by 2 fish)

Friday: 60 ÷ 20 = 3 (represented by 3 fish)

Monday: 

Tuesday: 

Wednesday: 

Thursday: 

Friday: 

174. A certain amount of money was shared among three children in the ratio 2:3:5. If the least got K3 000.00, calculate the total amount.

Working

Total ratio = 2+ 3 + 5 = 10

The least ratio $= \frac{2}{10}$

$= \frac{10}{10} \div \frac{2}{10}$ x K3000

$= \frac{\cancel{10}}{\cancel{10}} \times \frac{\cancel{10}}{\cancel{2}}$ x K3000

= 5 x K3000

= K15 000

175. Find the smallest number that can be divided by 10 and 12 without leaving a remainder.

Working

2	10	12
2	5	6
3	5	3
5	5	1
	1	1

The smallest number = 2 x 2 x 3 x 5

= 60

176. Mr Banda bought 6 baskets of tomatoes at K780 each. He sold three of the baskets at K950 each, the other two at K1 200 each. The sixth basket was sold at K680. Find the profit that Mr Banda made

Working

6 baskets of tomatoes at K780 each = K4 680 (cost price)

3 baskets sold at K950 each = = K2 850

2 baskets sold at K1 200 each = K2 400

1 basket sold at K680 = K 680

= K5 930 (selling price)

Profit = Selling price – Cost price

= K5 930 – K2 850

= K1 250

177. If 3 is subtracted from a certain number, the result is 18. Find the number.

Working

$y - 3 = 18$

$y - 3 + 3 = 18 + 3$

$y = 21$

178. Simplify $5 - 3\frac{1}{8}$

Working

$$5 - 3\frac{1}{8}$$

$$= \frac{5}{1} - \frac{25}{8}$$

$$= \frac{40-25}{8}$$

$$= \frac{15}{8}$$

$$= 1\frac{7}{8}$$

179. A child's height is 1 metre 18 millimetres. Express the height in millimetres.

Working

Measurement unit = km hm dam m dm cm mm

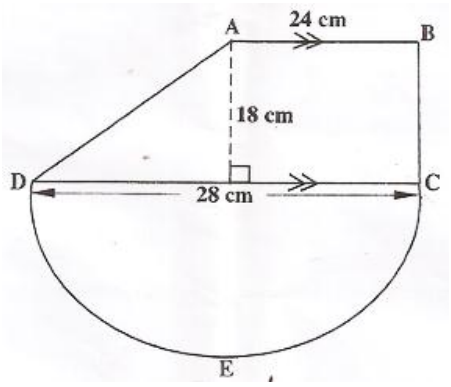
= 1 m = 1000 mm

= 1 x 1000 mm

= 1 000 mm + 18 mm

= 1 018 millimetres

180. Figure below is a composite shape made up of a trapezium **ABCD** and a semi-circle **DEC**.



Calculate the total area of the figure (Take $\pi = \frac{22}{7}$)

Working

Total area of the figure = area of trapezium ABCD + area of a semi-circle DEC

$= \frac{1}{2}$ (sum of parallel sides) x height + $\frac{1}{2}\pi r^2$

$= \frac{1}{2}$ (24 cm + 28 cm) x 18 cm + $\frac{1}{2}$ x $\frac{22}{7}$ x 14 cm x 14 cm

$= \frac{1}{2}$ x 52 cm x 18 cm + $\frac{1}{2}$ x 616 cm

= 468 cm^2 + 308 cm^2

= 776 cm^2

181. By selling a goat for K1 700, a farmer made a loss of 15t in every kwacha. Find the cost price

Working

Selling price = K1 700

The farmer lost = 15t in every kwacha

But farmer saved = 100t – 15t

= 85t of every kwacha

Cost price = ? more

To find cost price = $\frac{100}{85}$ x K1700

= K2000

182. Table below shows income tax rates.

Income per Month	**Tax Rate**
First K12 000.00	0% tax free)
Next K3 000.00	15%
Excess (0ver) K15 000.00	30%

How much tax does a person who receives a salary of K40 000.00 pay per month?

Working

Income	Rate	Tax
K12,000	0%	No tax
K3,000	15%	$\frac{15\% \text{ x } K3000}{100\%}$
		= 15 x K30
		= K450
K25000	30%	$\frac{30\% \text{ x } K25000}{100\%}$
		= K7500
Total tax		= K450 + K7500
		= K7 950

183. A carton contains guavas and mangoes in the ratio 5:2 respectively. If the carton contains 140 guavas, calculate the number of mangoes in the carton.

Working

Guavas = 140

Mangoes = ? less

$= \frac{2}{5}$ x 140

= 56 mangoes

184. A radio is sold at K400 at a discount of 20%. Calculate the discount in cash

Working

20% discount of K400 = $\frac{20}{100}$ x K400

= K80

185. Yamikani had 36 oranges. After sometime, $\frac{1}{9}$ of them went bad. He sold $\frac{3}{4}$ of the good oranges. How many good oranges were left?

Working

Original number of oranges = 36

$\frac{1}{9}$ oranges went bad = $\frac{1}{9}$ x 36

= 4

Remaining good oranges = 36 – 4

= 32

Sold $\frac{3}{4}$ of good oranges = $\frac{3}{4}$ x 32

= 24

Good oranges left = 32 – 24

= 8 oranges

186. A class has 50 lessons a week. If 8 of the lessons are for English, what percentage of the lesson is for English?

Working

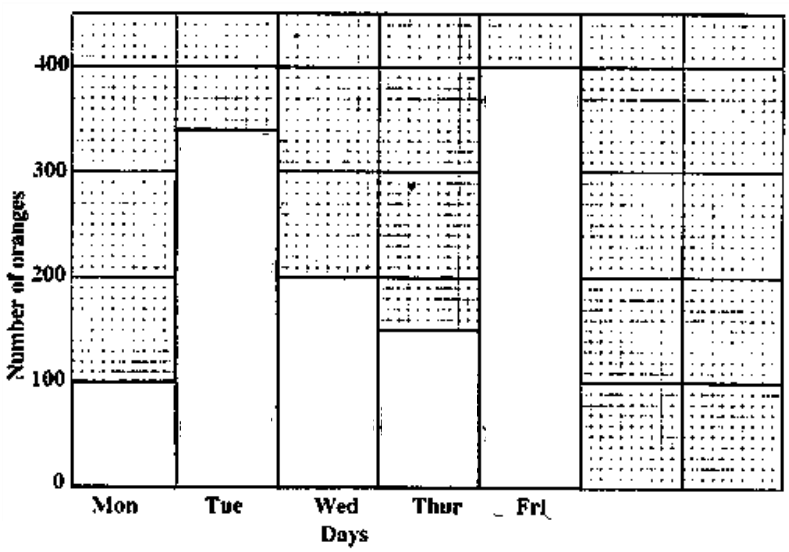
Lessons per week = 50

Lessons for English per week = 8

Percentage of the lesson for English = $\frac{8}{50}$ x 100%

= 16%

187. Figure below is a graph showing number of oranges harvested in a certain farm for five days. Use the graph to answer the questions below



a. How many more oranges were harvested on Wednesday than Thursday?

Working

Harvest for Wednesday = 200 oranges

Harvest for Thursday = 150 oranges

Difference = 200 – 150

= 50 oranges

b. If the price of oranges was K50.00 each, find the amount of money obtained by selling oranges on Tuesday.

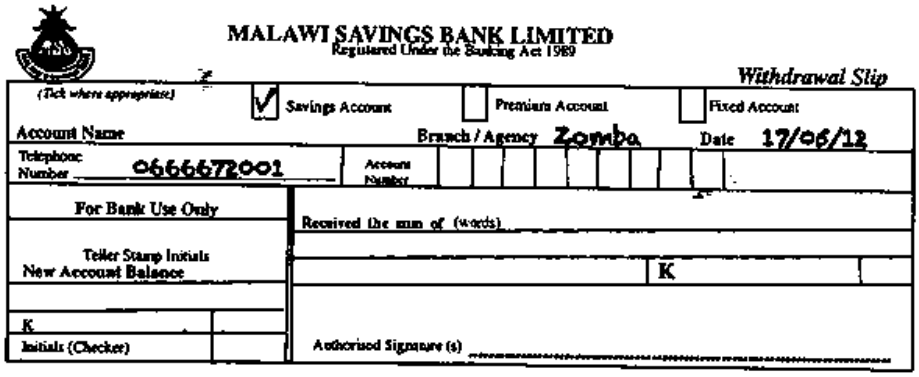
Working

Harvest for Tuesday = 340 oranges

Amount of money obtained by selling oranges = 340 x K50

= K17 000

188. You want to withdraw K2 500.00 from your Malawi Savings Bank account number 401277100. Complete the withdrawal slip shown below



MALAWI SAVINGS BANK LIMITED
Registered Under the Banking Act 1989

Withdrawal Slip

(Tick where appropriate) ☑ Savings Account ☐ Premium Account ☐ Fixed Account

Account Name _____ Branch / Agency Zomba Date 17/06/12

Telephone Number 0666672001 Account Number _____

For Bank Use Only

Teller Stamp Initials

New Account Balance

K

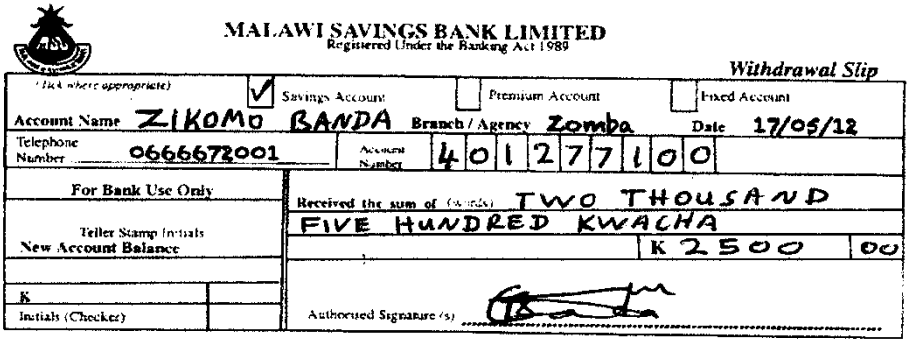
Initials (Checker)

Received the sum of (words) _____

K

Authorised Signature (s) _____

Solution



MALAWI SAVINGS BANK LIMITED
Registered Under the Banking Act 1989

Withdrawal Slip

(Tick where appropriate) ☑ Savings Account ☐ Premium Account ☐ Fixed Account

Account Name ZIKOMO BANDA Branch / Agency Zomba Date 17/05/12

Telephone Number 0666672001 Account Number 4 0 1 2 7 7 1 0 0

For Bank Use Only

Teller Stamp Initials

New Account Balance

K

Initials (Checker)

Received the sum of (words) TWO THOUSAND FIVE HUNDRED KWACHA

K 2500 00

Authorised Signature (s) _____

NB: During examinations, whether zonal or national, do not draw another withdrawal slip but just fill the areas required for you to fill in.

Do not write anything under the section of "For Bank Use Only"

189. Express 16 hours as a fraction of a day

Solution

A day has 24 hours

$$= \frac{16}{24}$$

$$= \frac{2}{3}$$

190. A company uses 20 litres of petrol per day. If petrol costs K160 per litre, how much does the company spend on petrol for 5 days?

Solution

1 day = uses 20 litres

1 litre = K160

Money spent per day = K160 x 20

= K3200

Money spent for 5 days = K3200 x 5

= K16 000

191. Change 3 425 cm to m dm cm

Solution

3 425 cm to m dm cm

$$\begin{array}{r} 34\text{ m} \\ 100\overline{)\,3\,425} \\ -\,3\,400 \\ \hline 25 \end{array} \qquad \begin{array}{r} 2\text{ dm} \\ 10\overline{)\,25} \\ -\,20 \\ \hline 5 \end{array} \qquad \begin{array}{r} 5\text{ cm} \\ 1\overline{)\,5} \\ -\,5 \\ \hline 0 \end{array}$$

= 3 425 cm to m dm cm is 34 m 2 dm 5 cm

NB:

1 m = 100 cm

1 dm = 10 cm

1 cm = 1 cm

192. In a school, 55% of the pupils are girls. If there are 306 boys, calculate the total number of pupils in the school

Solution

55% = girls

45% = boys

Boys = 306

Girls = ? more

$= \frac{55}{45}$ x 306

= 374 girls

Total number of pupils = 306 + 374

= 680 pupils

193. Find the cost of $\frac{3}{4}$ m of cloth if $\frac{3}{5}$ m costs K220

Solution

$= \frac{3}{4} \div \frac{3}{5}$ x K220

$= \frac{\cancel{3}}{4}$ x $\frac{5}{\cancel{3}}$ x K220

$= \frac{5}{\cancel{4}}$ x $\cancel{\text{K220}}^{55}$

= K275

194. Calculate the simple interest on K800 at a rate of 10% per annum for 3 months.

Working

Simple interest (I) $= \frac{\text{PTR}}{100}$

$= \frac{\text{K800 x 1 x 10}}{100}$

= K80 ÷ 12 months

= K6.66667 x 3 months

= K20

Or

Simple interest (I) $= \frac{\text{PTR}}{100}$

$= \frac{\text{K8}\not{0}\not{0} \text{ x } 1 \text{ x } 10}{1\not{0}\not{0} \text{ x } 4}$

$= \frac{\text{K80}}{4}$

= K20

195. A train covers a distance of 240 km between 8.30 am and 11.30 am. Find its speed in km per hour.

Working

Speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{240\ km}{3\ \text{hrs}}$ (from 8:30 am to 11:30 am = 3 hours)

= 80 km per hour

196. Six packets of sugar can be used in 3 weeks and 3 days. How many packets will be needed in 8 days?

Working

3 weeks = 21 days + 3 days

= 24 days

24 days = 6 packets

8 days = ? (less)

$= \frac{8}{24}$ x 6

= 2 packets

197. Dalitso, Mphatso and Mwayi shared K400 in the ratio of 2:3:5, respectively. How much did Mphatso get?

Working

Ratio = 2:3:5

Total parts of the ratio = 2 + 3 + 5

= 10

Mphatso's share $= \frac{3}{10}$ x K400

= K120

198. A grocer bought loaves of bread at K550 per unit and sold each loaf for K70. Calculate the profit made per unit.

Working

Loaves of bread bought per unit = K550

Cost price per loaf of bread = K550 ÷ 10

= K55

Selling price for each loaf = K70

Profit made per loaf of bread = K70 – K55

= K15

Profit made per unit = K15 x 10

= K150

199. Jane had K2 509. She spent K798 on food and K504 on groceries. How much money was left?

Working

= K2 509 – (K798 + K504)

= K2 509 – K1 302

= K1 207

She was left with K1 207

200. A bottle of paraffin has a volume of 25 000 cm^3. Calculate the capacity of paraffin in litres.

Working

1000 cm^3 = 1 litre

$= \frac{25000\ cm^3}{1000\ cm^3}$ x 1 ℓ

= 25 litres

201. Four people can clear a garden in 36 days. How many people would be required to clear the same garden in 24 days?

Working

36 days = 4 people

24 days = ? (more)

$= \frac{36\ days}{24\ days}$ x 4 people

= 6 people

202. Subtract $4 - 2\frac{3}{4}$

Working

$4 - 2\frac{3}{4}$

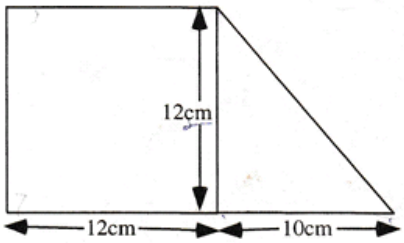
$= \frac{4}{1} - \frac{11}{4}$

$\frac{16-11}{4}$

$= \frac{5}{4}$

$= 1\frac{1}{4}$

203. Figure below shows a composite figure consisting of a square and a triangle.



Calculate the area of the figure

Working

Area of the figure = area of a square + area of a triangle

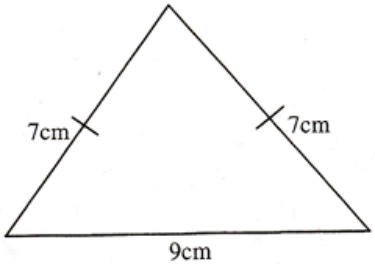
= side x side + $\frac{1}{2}$ x base x height

= 12 cm x 12 cm + $\frac{1}{2}$ x 10 cm x 12 cm

= 144 cm^2 + 60 cm^2

= 204 cm^2

204. What type of triangle is shown in the figure below?



= Isosceles triangle

205. A saleswoman received K2 500 as commission for selling goods worth K62 500. Find the commission percent.

Working

$$\text{Commission \%} = \frac{\text{Commission x } 100\%}{\text{Total cost}}$$

$$= \frac{\text{K2 500 x } 100\%}{\text{K62 500}}$$

$$= \frac{\overset{1}{\cancel{\text{K2 500}}} \text{ x } 100\%}{\underset{25}{\cancel{\text{K62 500}}}}$$

$$= \frac{100\%}{25}$$

$$= 4\%$$

206. Write five minutes to four in figures

Working

= five minutes to four in figures

= 03:55

207. What is the mean of the following numbers: 10, 28 and 13?

Working

Mean of 10, 28 and 13

$= \frac{10+28+13}{3}$

$= \frac{51}{3}$

$= 17$

208. Express 245 to the nearest ten

Working

245 to the nearest 10

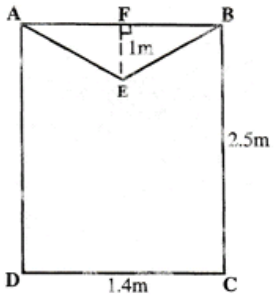
$= 250$

209. Add the following decimal numbers: 11.02, 2.8 and 0.435

Working

$$\begin{array}{r} 11.02 \\ 2.8 \\ +\ 0.435 \\ \hline 14.255 \\ \hline \end{array}$$

210. Figure below is a rectangular door **ABCD** with triangle **AEB** unpainted. **EF** = 1 m, **BC** = 2.5 m and **DC** = 1.4 m



Calculate the area of the painted part.

Working

Area of the painted part = area of a rectangular door – area of a triangle

= length x breadth – $\frac{1}{2}$ x base x height

= 2.5 m x 1.4 m – $\frac{1}{2}$ x 1.4 m x 1 m

= 3.5 m^2 – 0.7 m^2

= 2.8 m^2

211. Simply $4 + \frac{5}{8}$

Working

$$4 + \frac{5}{8}$$

$$= \frac{4}{1} + \frac{5}{8}$$

$$\frac{32 + 5}{8}$$

$$= \frac{37}{8}$$

$$= 4\frac{5}{8}$$

212. Work out the following bill:

10 loaves of bread at K55 00t each

15 packets of sugar at K75 00t each

8 bottles of cooking oil at K175 each

25 packets of salt K95 00t each

Working

		K t
10 loaves of bread at K55 00t each	= 10 x K55 00t =	550 00
15 packets of sugar at K75 00t each	= 15 x K75 00t =	1 125 00
8 bottles of cooking oil at K175 each	= 8 x K175 00t =	1 400 00
25 packets of salt K95 00t each	= 25 x K95 00t =	2 375 00
		= 5 450 00

213. There are 7 200 packets of sugar to be packed in 45 bales. How many packets will each bale have?

Working

$$
\begin{array}{r}
160 \\
45 \overline{)\,7\,200} \\
-\,4\,5 \\
\hline
2\,70 \\
-\,2\,70 \\
\hline
00 \\
-\,00 \\
\hline
0
\end{array}
$$

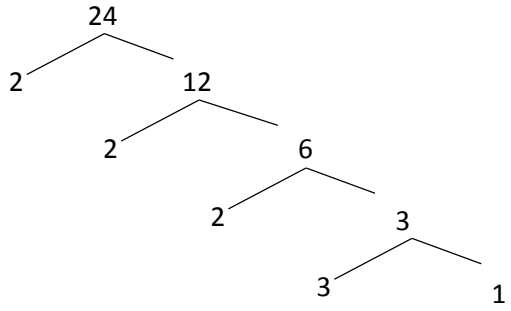
214. Express 24 as a product of its prime factors

Working

24 = 2 x 12

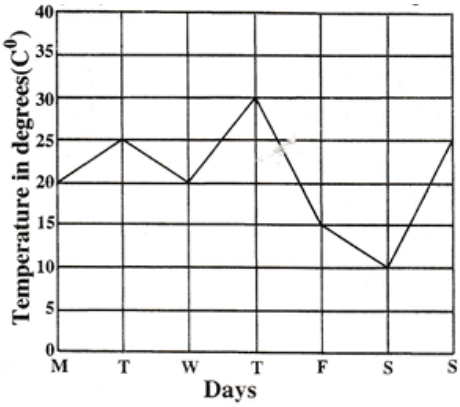
= 2 x 2 x 6

= 2 x 2 x 2 x 3 or



∴ 24 = 2 x 2 x 2 x 3

Figure below is a line graph showing days in a week. Use it to answer question 215



215. Calculate the difference in temperature between the hottest and coldest days of the weeks

Working

Hottest day = Tuesday (30^oC)

Coldest day = Saturday (10^oC)

= $30^oC - 10^oC$

= 20^oC

216. Bengo had 4*x* Kwacha. He gave *x* Kwacha to his friend. If he remained with K21 000, calculate the amount of money that Bengo gave to his friend.

Working

4x – x = K21 000

3x = K21 000

$\frac{3x}{3} = \frac{K21000}{3}$

x = K7000

∴ Bengo gave K7000 to his friend

217. Simplify 12.193 x 0.02 ÷ (4.65 + 1.35)

Working

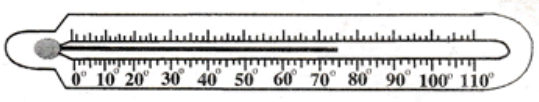
12.193 x 0.02 ÷ (4.65 + 1.35)

= 12.193 x (0.02 ÷ 6.00)

= 12.193 x 0.00333

= 0.0406

Figure below shows a thermometer. Use it to answer question 218



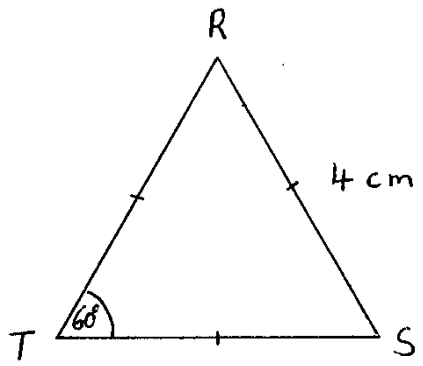
218. What is the temperature reading of the thermometer?

Working

= 75°

219. Using a ruler and a protractor, construct an equilateral triangle **RST** with a side 4 cm.

Working



220. The average temperature for a week was 27°C. The average temperature for the first six days was 28°C. Calculate the temperature for the seventh day.

Working

Average temperature for a week = 27°C

Average temperature for first 6 days = 28°C

To find temperature for the 7th day = 27°C x 7 – 28°C x 6

= 189°C – 168°C

= 21°C

221. Namaye collected the following number of eggs from her farm: 380, 600, 400, 490, 400, 380, 490, 520. Calculate the median number of eggs collected.

Working

Median of 380, 380, 400, 400, 490, 490, 520, 600

Median = $\frac{400 + 490}{2}$

= 445

222. The first three numbers in a number pattern are: 55, 70 and 85. Find the fourth number.

Working

55, 70 and 85 ____

70 – 55 = 15

Add 15 to 85

The fourth number = 100

223. A boy and a girl shared 120 tablets of soap in the ratio 3:2 respectively. What was the boy's share?

Working

Ratio = 3:2

Total ratio = 3 + 2 = 5

To find boy's share = $\frac{3}{5}$ x 120

= 72

224. Find the amount of money to be paid on a loan of K18 000 for 36 months at 5% per annum for simple interest.

Working

Amount = Principal + Interest

Principal = K18 000

Simple interest = $\frac{\text{PTR}}{100}$

= $\frac{\text{K18}\cancel{000} \text{ x } 3 \text{ x } 5}{\cancel{100}}$

= K180 x 3 x 5

= K2 700

∴ Amount = K18 000 + K2 700

= K20 700

Note:

36 months = 36 ÷ 12

= 3 years

225. A shopkeeper sold 2 bales of sugar for K34 000. If each bale was bought at K15 000, what was the profit made?

Working

Sold 2 bales of sugar = K34 000

Each bale was bought = K15 000

= K15 000 x 2

= K30 000

Profit made = K34 000 – K30 000

= K4 000

226. Multiply the difference between 701.2 and 681 by 2.3, give the answer to 1 decimal place

Working

= 701.2 – 681

= 20.2

= 20.2 x 2.3

= 46.46

= 46.5 to 1 decimal place

227. A bicycle tyre has a diameter of 34.3 cm. Calculate the circumference of the tyre. (Take $\pi = \frac{22}{7}$)

Working

Circumference of a circle = πd (pi x diameter)

= $\frac{22}{7}$ x 34.3 cm

= 107.8 cm

228. Tinyade received R1 275 from South Africa. If R1 = K50, calculate the amount of money that Tinyade received in Malawi Kwacha.

Working

R1 = K50

∴ R1 275 = more

$= \frac{\text{R1 275 x K50}}{\text{R1}}$

= K63 750

229. The average mass of 13 bags of maize is 52.2 kg. If 3 bags are sold, the average mass of the remaining bags is 52.7 kg. Calculate the total mass of the three bags.

Working

Average mass of 13 bags = 52.2 kg

Average mass of 10 remaining bags = 52.7 kg

To find total mass of the 3 bags = total mass of 13 bags – total mass of 10 bags

= 52.2 kg x 13 – 52.7 kg x 10

= 678.6 – 527

= 151.6 kg

230. A vegetable garden is 57m long and 36m wide. What is the length of the wire required to fence the garden?

Working

Perimeter = (2 x L) + (2 x W)

= (2 x 57m) + (2 x 36m)

= 114m + 72m

= 186 metres

231. Simplify $\frac{4}{5} \times \frac{2}{3} - \frac{3}{10} \div \frac{3}{5}$

Working

$$\frac{4}{5} \times \frac{2}{3} - \frac{3}{10} \div \frac{3}{5}$$

$$= \frac{4}{5} \times \frac{2}{3} - \left(\frac{3}{10} \div \frac{3}{5}\right)$$

$$= \left(\frac{4}{5} \times \frac{2}{3}\right) - \left(\frac{3}{10} \times \frac{5}{3}\right)$$

$$= \frac{8}{15} - \frac{1}{2}$$

$$\frac{16-15}{30}$$

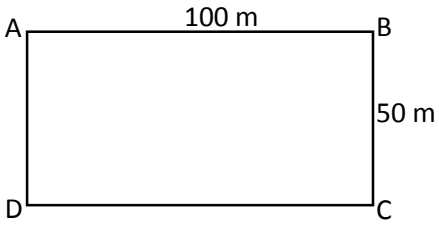
$$= \frac{1}{30}$$

232. Aleka had K5 000 and bought 30 exercise books at K750 per unit and 5 pens at K120 per pen. Calculate the amount of money left.

Working

Aleka bought 30 exercise books at K750/unit	= K750 x 3
	= K2250
He bought 5 pens at K120 each	= K120 x 5
	= K600
Total money used	= K2 250 + K600
	= K2 850
Amount of money left	= K5 000 – K2 850
	= K2 150

233. Figure below shows a sketch of a rectangular woodlot **ABCD**.



If **AB** = 100 m and **BC** = 50 m, using a scale of 1 cm to represent 25 m, draw a plan of the woodlot.

Working

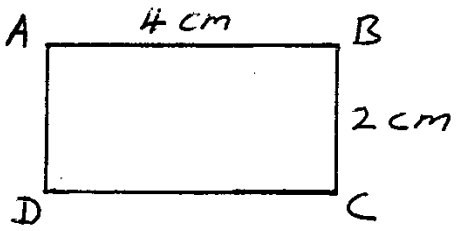
Scale = 1:25

100 m $= \frac{1}{25}$ x 100

Length = 4 cm

100 m $= \frac{1}{25}$ x 50

Width = 2 cm



234. Simplify *4y + 7p – y – 6p*

Working

$4y + 7p – y – 6p$

$= 4y – y + 7p – 6p$

$= 3y + p$

235. A radio was sold for K4000 at a discount of 20%. What was the cash discount?

Working

20% of K4000

$= \frac{20}{100}$ x K4000

= K800

236. A worker's salary is K14 200 per month. If he receives K12 700 per month after deducting income tax, what is his income tax per year?

Working

Worker's salary per month = K14 200

After deducting income tax = K12 700

His income tax per year = K14 200 – K12 700

= K1 500 x 12 months

= K18 000

237. Table below shows a message sent by telegram.

To:	John Phiri Box 38 Kasungu send money for school uniform
From:	Grace Phiri

What is the cost of sending the message at K20 per word?

Working

Number of words = 12

Rate per word = K20

Total cost = 12 x K20

= K240

238. A machine uses 550 ml of petrol in a minute. If the machine worked for $1\frac{1}{2}$ hours, calculate the number of litres used.

Working

A machine uses = 550 ml of petrol per minute

If it worked for $1\frac{1}{2}$ hours = ? (more)

$1\frac{1}{2}$ hours = 90 minutes

$$= \frac{550 \text{ ml} \times 90 \text{ minutes}}{1 \text{ minute}}$$

= 49 500 millilitres

239. Mayamiko's business had the following transaction in April 2019:

1 April	balance in hand	K2 000
18 April	bought basins	K3 000
25 April	sold cups	K1 900

Prepare cash account for Mayamiko's business and balance it as at 30th April 2019

Working

Mayamiko's Cash Account

Dr Cr

Date	Receipts	Amount	Date	Expenditure	Amount
1 April	Balance in hand	K2 000	18 April	Bought basins	K3 000
25 April	Sold cups	K1 900	30 April	Balance c/d	K 900
		K3 900			K3 900
1 May	Balance b/d	K 900			

240. Simplify $\frac{2}{7}$ x 3

Working

$= \frac{2}{7}$ x 3

$= \frac{6}{7}$

241. Write 2:40 in words

Working

= twenty minutes to three

242. Find the HCF of 50, 30 and 16 using factor method

Working

50 = 2 x 5 x 5

30 = 2 x 3 x 5

16 = 2 x 2 x 2 x 2

∴ HCF = 2

243. Write the next number in the following pattern

1 1 2 3 5 8 13 21 _____

Working

1 + 1 = 2

1 + 2 = 3

2 + 3 = 5

3 + 5 = 8

5 + 8 = 13

8 + 13 = 21

13 + 21 = 34

∴ The next number = 34

244. If 1 cm represents 10 km, what distance will 4.4 cm represent?

Working

1 cm = 10 km

4.4 = more

$$= \frac{4.4 \text{ cm x } 10 \text{ km}}{1 \text{ cm}}$$

= 44 km

245. Arrange the following numbers starting with the biggest

$\frac{3}{4}$, $\frac{3}{5}$, $\frac{2}{3}$

Working

$= \frac{3}{4}$, $\frac{3}{5}$, $\frac{2}{3}$

$= \frac{3}{4}$ x 12 = 9

$= \frac{3}{5}$ x 12 = 7.2

$= \frac{2}{3}$ x 12 = 8

$= \frac{3}{4}$, $\frac{2}{3}$, $\frac{3}{5}$

Note

Multiply by any whole number to find which number (fraction) is big or small

246. Find the difference between the product of 23 and 56 and the sum of 92 and 200.

Working

Product of 23 and 56 = 23 x 56

= 1288

Sum of 92 and 200 = 92 + 200

= 292

Difference of 1288 and 299 = 1288 – 292

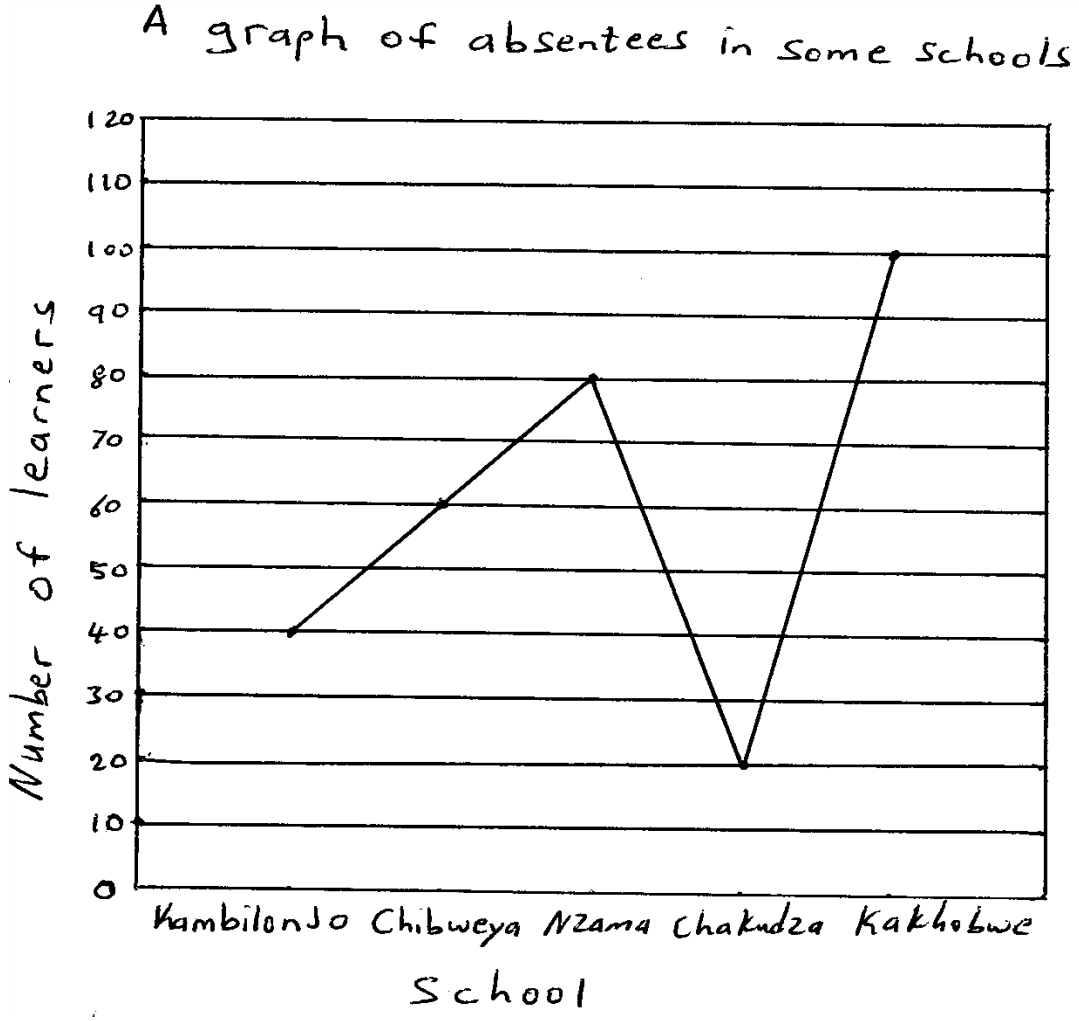
= 996

247. The following table shows the number of absentees in some schools around Ntcheu boma.

No. of absentees	**40**	**60**	**80**	**20**	**100**
School	Kambilonjo	Chibweya	Nzama	Chakudza	Kakhobwe

Using a scale of 1 cm to represent 10 learners, draw a line graph for the absentees

Working

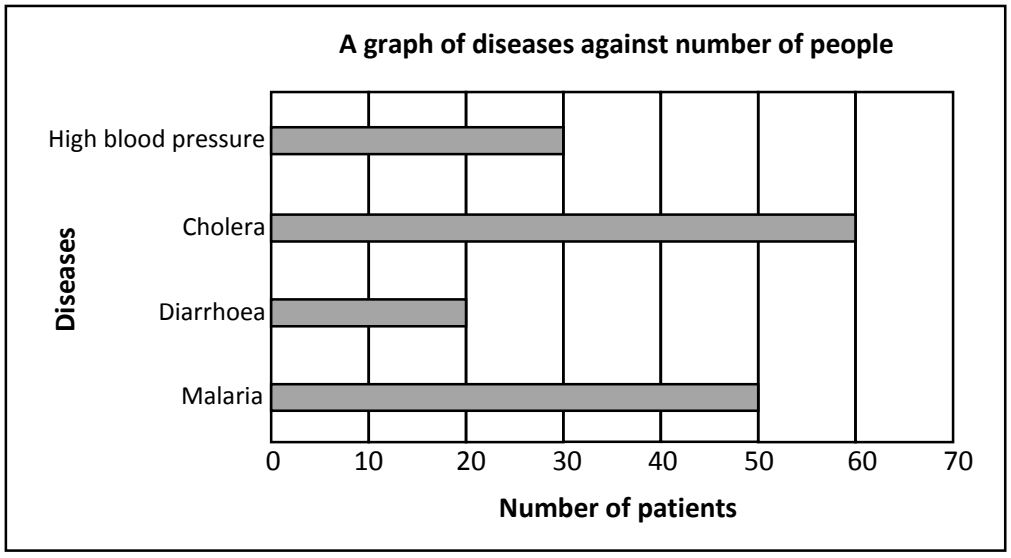


248. Write 8, 321, 907 in words

Working

= eight million three hundred twenty one thousand nine hundred and seven

249. The bar graph below shows the number of patients who were admitted to Ntcheu District Hospital in a certain week for malaria, diarrhoea, cholera and high blood pressure. Use it to answer the questions that follow



a. How many patients were admitted for high blood pressure?

= 30 patients

b. Find the total number of patients admitted during the week

= 30 + 60 + 20 + 50

= 160 patients

c. Which disease had the highest number of patients at the hospital?

= cholera

250. Express 60t as a fraction of Kwacha

Working

$60t = K\frac{60}{100}$

$= \frac{3}{5}$

251. a. Simplify $4 \div \frac{2}{3}$

Working

$4 \div \frac{2}{3}$

$= \frac{4}{1} \div \frac{2}{3}$

$= \frac{4}{1} \text{ x } \frac{3}{2}$

$= \frac{12}{2}$

$= 6$

b. $3\frac{1}{4} - 1\frac{1}{6} \div \frac{2}{3}$

$= 3\frac{1}{4} - (1\frac{1}{6} \div \frac{2}{3})$

$= 3\frac{1}{4} - (\frac{7}{6} \div \frac{2}{3})$

$= 3\frac{1}{4} - (\frac{7}{6} \text{ x } \frac{3}{2})$

$= 3\frac{1}{4} - 1\frac{3}{4}$

$= 2\frac{1-3}{4}$

$= 1\frac{2}{4}$

$= 1\frac{1}{2}$

252. How long does it take to earn an interest of K10 000 on K200 000 at 10% per annum?

Working

Time $= \frac{100 \text{ x Interest}}{\text{Principal x Rate}}$

Interest = K10 000

Principal = K200 000

Rate = 10%

∴ Time $= \frac{\cancel{100} \text{ x } \cancel{\text{K10000}}}{\cancel{\text{K200000}} \text{ x } \cancel{10}}$

$= \frac{1}{2}$ year or 6 months

253. A chief will celebrate his silver jubilee in the next 5 years. How old is the chief?

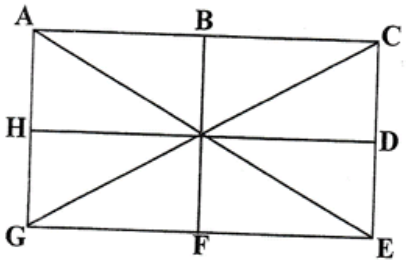
Working

Silver jubilee = 25 years

The chief is = 25 years – 5 years

= 20 years

254. Figure below shows a rectangle **ACEG** with lines **AE**, **BF**, **CG** and **DH**.



Mention **two** diagonal lines that represent lines of symmetry.

= AE and CG

255. Calculate the rate for K200 000 to yield as interest K15 000 in 3 years.

Working

Rate $= \frac{100 \text{ x Interest}}{\text{Principal x Time}}$

Interest = K15 000

Principal = K200 000

Time = 3 years

∴ Rate $= \frac{\cancel{100} \text{ x } \overset{5}{\cancel{\text{K15000}}}}{\cancel{\text{K200000}} \text{ x } \cancel{3}_{1}}$

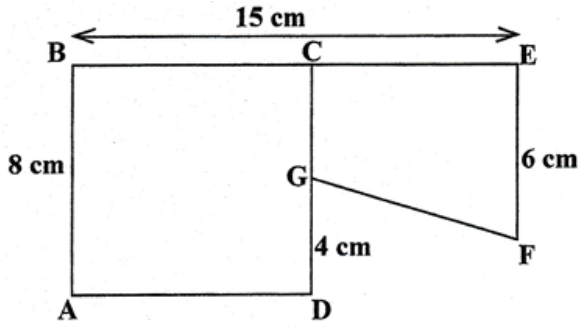
$= \frac{5}{2}$

$= 2\frac{1}{2}\%$

256. Insert an inequality symbol in the box in order for the inequality $x - 6 \square x - 10$ to be correct.

= <

257. Figure below shows a composite shape made up of a square **ABCD** and a trapezium **CEFG**.



If **AB** = 8 cm, **BCE** = 15 cm, **EF** = 6 cm and **DG** = 4 cm, calculate the area of the composite shape.

Working

Area of the composite shape = area of a square + area of a trapezium

= side x side $+\frac{1}{2}$ (sum of parallel sides) x height

= 8 cm x 8 cm $+\frac{1}{2}$ (4 cm + 6 cm) x 7 cm

= 64 cm^2 $+\frac{1}{2}$ x 10 cm x 7 cm

= $+\frac{70}{2}$

= + 35 cm^2

= 64 cm^2 + 35 cm^2

= 99 cm^2

258. Table below shows number of tomatoes sold by two vendors at a certain market.

Name of Vendor	Number of Tomatoes Sold
Prince	
Princess	

If  represents 60 tomatoes, calculate the difference between the number of tomatoes sold by Prince and those sold by Princess.

Working

Number of tomatoes for Prince = 6 x 60

= 360

Number of tomatoes for Princess = 4 x 60

= 240

Difference = 360 – 240

= 120 tomatoes

259. How much money did a business person borrow if she paid back with an interest of K5 000 over 2 years at 2.5% per annum?

Working

Principal $= \frac{100 \text{ x Interest}}{\text{Rate x Time}}$

Interest = K5 000

Rate = 2.5%

Time = 2 years

Principal $= \frac{100 \text{ x K}\overset{2500}{\cancel{5000}}}{2.5 \text{ x } \cancel{2}_{1}}$

$= \frac{K250000}{2.5}$

= K100 000

260. The pass rate at a certain school decreased by 5%. If in the previous year 60 learners passed, how many learners passed in the following year?

Working

Pass rate in the following year

$$= 60 - \frac{\cancel{5}^{1}}{\cancel{100}_{20}} \times 60$$

$$= 60 - \frac{\cancel{60}^{3}}{\cancel{20}_{1}}$$

$$= 60 - 3$$

$$= 57 \text{ learners}$$

261. A triangle has sides which are 11 cm, 13 cm and 9 cm. find the perimeter of the triangle.

Working

Perimeter = sum of all sides

= 11 cm + 13 cm + 9 cm

= 33 cm

262. Tinyade and Chimwemwe collected data on all the people selling items in a local market and they made tallies for the items as follows:

Item	Tally
Vegetables	𝍸 𝍸 𝍸 II
Bananas	𝍸 II
Fish	𝍸 𝍸 IIII
Beef	𝍸 II
Maize flour	𝍸 III
Rice	III
Firewood	𝍸 𝍸 I

a. How many people were selling beef?

= 7 people

b. Which item was being sold by most people?

= vegetables

c. Which item was being sold by the least number of people?

= rice

d. How many sellers were in the market?

= 67 sellers

e. Which items had the same number of sellers?

= bananas and beef

263. Mr. Masese is building a house using a loan from a local bank. If he got K1 500 000 at a rate of 8% per annum compounded yearly for 36 months, calculate the interest.

Working

1st year principal = K1 500 000

Interest $= \frac{\text{PTR}}{100}$

$= \frac{\text{K1500000 x 1 x 8}}{100}$

= K120 000

2nd year principal = K120 000 + K1 500 000 = K1 620 000

$= \frac{\text{K1620000 x 1 x 8}}{100}$

= K129 600

3rd year principal = K129 000 + K1 620 000 = K1 749 000

$$= \frac{\text{K}1749000 \text{ x } 1 \text{ x } 8}{100}$$

= K139 968

∴ Compound interest = K120 000 + K129 600 + K139 968

= K389 568

264. Ndaleka lost 3% after selling a radio for K46 560. Find the amount he lost.

Working

Cost price $= \frac{100}{97}$ x 46 560

= K48 000

Loss = Cost price – Selling price

Amount lost = K48 000 – K46 560

= K1440

265. Construct a circle with radius 3 cm

Working

