

1.  $136$

$+ 64$

$\underline{200}$

2.  $9x + 5y - 4x - 7y$

$= 9x - 4x + 5y - 7y$

$= 5x - 2y$

3.  $XCIV = XC + IV$

$= 90 + 4$

$= 94$

4.  $11001 = \text{Eleven thousand one.}$

5.  $2\frac{1}{4} \div 1\frac{1}{2} = \frac{9}{4} \div \frac{3}{2}$

$= \frac{9}{4} \times \frac{2}{3}$

$\frac{24}{4} \times \frac{2}{3}$

$= \frac{3}{2} = 1\frac{1}{2}$

6. 

B	N	R
2	11	1
2	5	1
2	2	0
2	1	1
0		

$11_{\text{ten}} = 1011_{\text{two}}$

7. 4 pencils cost Shs1,600

1 pencil costs Shs(1,600 ÷ 4)

1 pencil costs Shs400

Shs400 can buy 1 pencil

Shs2,800 can buy 2,800 ÷ 400

Shs2,800 can buy 7 pencils.

8.  $(0.4 \times 27) + (73 \times 0.4)$

$0.4(27 + 73)$

$0.4 \times 100$

$\frac{4}{10} \times 100$

$\frac{4}{10}$

$4 \times 10 = 40$

9. 1, 8, 27, 64, 125, 216

$1 \times 1 \times 1 = 1$

$2 \times 2 \times 2 = 8$

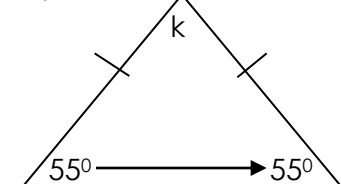
$3 \times 3 \times 3 = 27$

$5 \times 5 \times 5 = 125$

$6 \times 6 \times 6 = 216$

10.  $478000 = 4.78 \times 10^5$

11.



$K + 55^\circ + 55^\circ = 180^\circ$

$K + 110^\circ = 180^\circ$

$K + 110^\circ - 110^\circ = 180^\circ - 110^\circ$

$K = 70^\circ$

12.  $AnB = \{2, 3, 5\}$

$n(AnB) = 3$

13.  $\frac{\text{Shs}400 \times 100\%}{\text{Shs}1,600}$

$= \frac{1}{4} \times 100\%$

$= 25\%$

14. If  $a = 7$

$a^2 + a^0$

$a \times a + 1$

$7 \times 7 + 1$

$49 + 1$

$= 50$

15.  $\begin{array}{r} 17 \overline{) 289} \\ 17 \overline{) 17} \\ \underline{17} \phantom{0} \\ 1 \phantom{0} \end{array}$

$\sqrt{289} = 17$

16.  $SI = P \times R \times T$

$= \text{Shs}1,500,000 \times \frac{4}{100} \times \frac{8}{12}$

$= \text{Shs}5,000 \times 1 \times 8$

$= \text{Shs}40,000$

17.  $-4 + (+7)$

$= -4 + 7$

$= +3$

18.  $= 0.4 \times 30 \text{ apples}$

$= \frac{4}{10} \times 30 \text{ apple}$

$= 4 \times 3 \text{ apples}$

$= 12 \text{ apples are green}$

19.  $F_k = \{2_1, 2_2, 2_3, 3_1\}$

$K^k = 2 \times 2 \times 2 \times 3$

$K = 4 \times 6$

$K = 24$

20. 9 : 30am

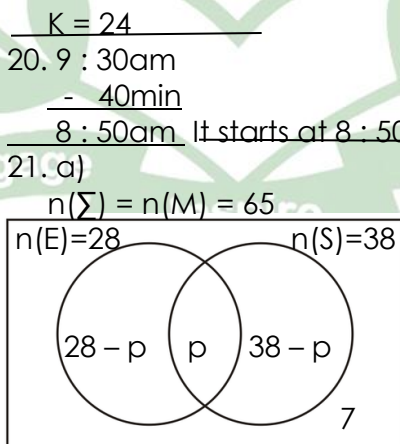
$- 40\text{min}$

$8 : 50\text{am}$  It starts at 8 : 50am.

21. a)  $n(\Sigma) = n(M) = 65$

$n(E) = 28$

$n(S) = 38$



b). Value of p

$28 - p + p + 38 - p + 7 = 65$

$28 - 38 + 7 + p - p - p = 65$

$73 - p = 65$

$73 - 73 - p = 65 - 73$

$\frac{-p}{-1} = \frac{-8}{-1}$

$P = 8$

(c)  $n(E) \text{ only} + n(S) \text{ only}$

$(28 - p) + (38 - p)$

$(28 - 8) + (38 - 8)$

$20 + 30$

$50$

Prob =  $\frac{50}{65}$

22a).  $(\frac{25}{100} \times \frac{144}{100}) \div (\frac{12}{10} \times \frac{5}{10})$

$\frac{25}{100} \times \frac{144}{100} \times \frac{10}{12} \times \frac{10}{5}$

$\frac{6}{10} = 0.6$

b).  $\frac{1}{3} - \frac{1}{5} \text{ of } \frac{5}{10} + \frac{2}{5}$

$\frac{1}{3} - \frac{1}{5} \times \frac{5}{10} + \frac{2}{5}$

$\frac{1}{3} - \frac{1}{10} + \frac{2}{5}$

$\frac{2}{5} + \frac{1}{3} - \frac{1}{10}$

$\frac{12}{30} + \frac{10}{30} - \frac{3}{30}$

$\frac{22}{30}$

$\frac{22}{30} = \frac{11}{15}$

23. Av. Speed =  $\frac{\text{total distance}}{\text{Total time taken}}$

$= \frac{100\text{km} + 100\text{km}}{3\text{hrs} + 2\text{hrs}}$

$= \frac{200\text{km}}{5\text{hrs}}$

$= 40\text{km/hr}$

24a).  $1\text{m} = 100\text{cm}$   $1\text{m} = 100\text{cm}$

$6\text{m} = 6 \times 100\text{cm}$   $4\text{m} = 4 \times 100\text{cm}$

$6\text{m} = 600\text{cm}$   $4\text{m} = 400\text{cm.}$

No of files along the length

$\frac{600\text{cm}}{20\text{cm}} = 30\text{files}$

$20\text{cm}$

### The Width

$$\frac{400\text{cm}}{20\text{cm}} = 20\text{tiles}$$

### No of tiles along the length

$$(30 \times 20) \text{ tiles}$$

$$= 600\text{tiles.}$$

### (b). No of boxes

$$(600 \div 25) = 24 \text{ boxes}$$

### Amount required

$$\text{Shs}30,000 \times 24$$

$$\text{Shs}720,000/=$$

### 25a). washing soap. Total expe

$$\text{Shs}30,000 \times 4 \quad \text{Shs}12,000$$

$$\text{Shs}720,000= \quad \text{Shs}15,000$$

### Bathing soap + Shs10,000

$$\text{Shs}2,500 \times 6$$

$$\text{Shs}15,000=$$

### b). Change

$$\text{Tooth pate} \quad \text{Shs}42,000$$

$$\text{Shs}5,000 \times 2 \quad - \text{Shs}37,000$$

$$\text{Shs}10,000 \quad \text{Shs}5,000$$

26. Let Peter's age be k yrs

Barbara's age will be (k-20)yrs  
in 15 years' time.

Peter's age will be (k + 15) yrs

Barbara's age will be k - 20 + 15

$$= (k - 5)$$

$$2(k - 5) = k + 15$$

$$2k - 10 = k + 15$$

$$2k - 10 + 10 = k + 15 + 10$$

$$2k = k + 25$$

$$2k - k = k - k + 25$$

$$K = 25$$

Barbara is = (k - 20)yrs

$$= (25 - 20)$$

$$= \text{yrs.}$$

27. Let the 1<sup>st</sup> no be w

1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	total
w	w+2	w+4	51

$$w + w + 2 + w + 4 = 51$$

$$w + w + w + 2 + 4 = 51$$

$$3w + 6 = 51$$

$$3w + 6 - 6 = 51 - 6$$

$$\frac{3w}{3} = \frac{45}{3}$$

$$w = 15$$

28.

In 1 min Tap A fills  $\frac{1}{3}$  of the tank

In 1 min Tap B fills  $\frac{1}{6}$  of the tank

$$\frac{1}{3} + \frac{1}{6} = \frac{2}{6} + \frac{1}{6}$$

$$= \frac{3}{6} = \frac{1}{2}$$

$$1 \div \frac{1}{2} = 1 \times \frac{2}{1} = 2\text{min}$$

29a).

$$4k + 2k + 2k + 40^\circ = 360^\circ$$

$$8k + 40^\circ - 40^\circ = 360^\circ - 40^\circ$$

$$\frac{8k}{8} = \frac{120^\circ}{8}$$

$$K = 15^\circ$$

b). PQR =  $180^\circ - 2k$

$$= 180^\circ - 2 \times 15^\circ$$

$$= 180^\circ - 30^\circ$$

$$= 150^\circ$$

30a). No of candidates.

$$= 3 + 2 + 1 + 3 + 1 = 10$$

b). Sum = Average x no of items

$$= 61 \times 10$$

$$= 610$$

$$40 \times 3 + wx2 + 60 + 80 \times 3 + 90 = 610$$

$$120 + 2w + 60 + 240 + 90 = 610$$

$$2w + 120 + 60 + 240 + 90 = 610$$

$$2w + 510 = 610$$

$$2w + 510 - 510 = 610 - 510$$

$$\frac{2w}{2} = \frac{100}{2}$$

$$W = 50$$

31. Value of x Value of y

$$X = 5m + 4m \quad y = 6m + 8m$$

$$X = 9m \quad y = 32m$$

$$\text{First area} \quad \text{2<sup>nd</sup> area}$$

$$A = L \times W \quad A = L \times W$$

$$= 9m \times 6m \quad = 8m \times 4m$$

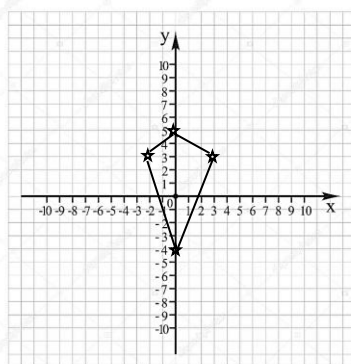
$$= 54\text{cm}^2 \quad = 32\text{m}^2$$

$$\text{Total Area}$$

$$54\text{m}^2 + 32\text{m}^2$$

$$= 86\text{cm}^2$$

32a).



b). The name of the shape is the kite.

$$(c) \text{Area} = \frac{1}{2} \times 9\text{units} \times 6\text{units}$$

$$= 1 \times 9 \text{ units} \times 3 \text{ units}$$

$$= 27 \text{ sg.units}$$