

FORM 1
MATHEMATICS MARKING SCHEME

$$\begin{array}{r}
 1. \\
 4,632 \\
 + 273 \\
 \hline
 7,105 \\
 90,438 \\
 \hline
 102,448
 \end{array}$$

Roundry off
102,448
= 102,000

2.

$$\begin{array}{l}
 \text{First } \frac{1}{4} \\
 \\
 \text{Second} = \frac{1}{6} \times \frac{3}{4} = \frac{1}{8}
 \end{array}$$

$$\begin{array}{l}
 \text{Forth } \frac{1}{6} \times \frac{3}{4} = \frac{1}{8} \\
 \\
 \text{Second} = 1 - \left(\frac{1}{4} + \frac{1}{8} + \frac{1}{8} \right) \\
 = 1 - \left(\frac{2}{8} + \frac{1}{8} + \frac{1}{8} \right) \\
 = 1 - \frac{4}{8} = \frac{4}{8} = \frac{1}{2}
 \end{array}$$

$$\begin{array}{l}
 \text{if } \frac{3}{8} = 3ha \\
 \\
 \therefore \frac{8}{8} \\
 \frac{8}{8} \times 3 \times 3 \\
 = 8ha
 \end{array}$$

$$\begin{array}{l}
 \text{Third} = \frac{1}{6} \times \frac{3}{4} = \frac{1}{8}
 \end{array}$$

$$\begin{array}{l}
 \text{Third} = 1 - \frac{5}{8} = \frac{3}{8}
 \end{array}$$

3.

$$\begin{array}{l}
 \frac{3}{4} + \frac{1}{2} \left| \frac{2}{3} \right| \div \frac{3}{5} \times \frac{4}{5} \\
 \\
 \frac{2}{3} - \frac{3}{7} = \frac{14-9}{21} = \frac{5}{21} \\
 \\
 \frac{3}{4} + \frac{1}{2} \times \frac{5}{21} \div \frac{3}{5} \times \frac{4}{5}
 \end{array}$$

$$\begin{array}{l}
 \frac{3}{4} + \frac{5}{42} \times 3 \times 3 \\
 = \frac{3}{4} + \frac{10}{63} \\
 = \frac{189}{252} + \frac{40}{252} = \frac{229}{252}
 \end{array}$$

4. a) $4480 = 2 \times 2240$

$$\begin{aligned} &= 2 \times 2 \times 1120 \\ = 2 \times 2 \times 2 \times 560 &= 2 \times 2 \times 2 \times 2 \times 280 \\ &= 2 \times 2 \times 2 \times 2 \times 2 \times 140 \\ &= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 70 \\ &= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 35 \\ &= 2^7 \times 5 \times 7 \end{aligned}$$

b)

$$\frac{3024}{1008} \frac{1512}{504} \frac{756}{252} \frac{378}{126} \frac{189}{63} \frac{63}{21} = 3$$

5.

$$\frac{2x-3}{3} = 7 - 2x$$

$$2x - 3 = 21 - 6x$$

$$8x = 24$$

$$8x = 24$$

$$x = 3$$

6.

$$SI = P \times \frac{R}{100} \times T$$

$$P = \frac{6000 \times 100 \times 12}{20 \times 9}$$

$$6000 = P \times \frac{20}{100} \times \frac{9}{12}$$

$$P = \text{sh } 4,000$$

7.

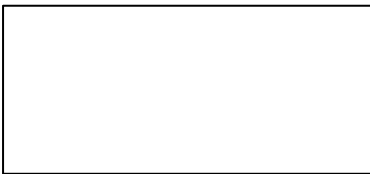
$$\frac{3}{4} - \frac{1}{8} = \frac{6-1}{8} = \frac{5}{8}$$

$$\text{if } \frac{5}{8} = 10,500 \text{ litres}$$

$$\therefore \frac{8}{8} = \frac{8}{8} \times 10,500 \times \frac{8}{5}$$

when full = 16,800 litres

8.



$$\text{Scale } 1\text{cm} = 20,000\text{cm} \quad \text{If } 40,000\text{m}^2 = 1\text{cm}^2$$

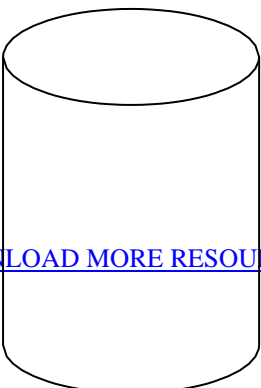
$$1\text{cm} = \frac{20,000}{100} = 200\text{m} \quad \therefore 168,000\text{m}^2$$

$$1\text{cm}^2 = 200 \times 200$$

$$= 40,000\text{m}^2$$

$$\frac{168,000 \times 1}{40,000} = 4.2\text{cm}^2$$

9.



$$r = \pi r^2 h$$

$$= (3.142 \times 1.55 \times 1.55 \times 8.5)\text{m}^3$$

$$= 64.163567\text{m}^3$$

$$1 \text{ litre} = 1000\text{cm}^3$$

$$= 0.001\text{m}^3$$

$$\begin{aligned} \text{if } 0.001m^3 &= 1 \text{ litre} \\ \therefore 64.164m^3 & \\ &= 0.064 \text{ litres} \end{aligned}$$

10.

If 3% = 240,000

Total car cost = 8,000,000

$$\therefore 100\% = \frac{100 \times 240,000}{3}$$

Less 16% VAT = 1,280,000

less commision = 240,000

Ksh 8,000,000

sh 6,480,000

11.

$$\frac{12^3(9^4 - 3^5)}{6^3 \times 3^6} = \frac{1,728 \times 6318}{216 \times 729}$$

$$\frac{1,728(6,561 - 243)}{216 \times 729} = 69.333$$

12.

Area of the sector

$$= \frac{\sigma}{360} \times \pi r^2$$

$$= \frac{90}{360} \times \frac{22}{7} \times 15 \times 15$$

$$= 176.7857 \text{ cm}^2$$

$$\text{Area of } \Delta = \frac{1}{2} \times b \times h$$

$$= \frac{1}{2} \times 15 \times 15$$

$$= 112.5 \text{ cm}^2$$

$$176.7857$$

$$\text{Area shanded} = \frac{-112.500}{64.2857 \text{ cm}^2}$$

13. a)

$$1^{\text{st}} \quad 2^{\text{nd}} \quad 3^{\text{rd}} \quad 4^{\text{th}} \quad 5^{\text{th}}$$

$$12, 14, 13, y, y+17$$

$$\frac{12+14+13+y+y+17}{5}$$

$$2y+56=80$$

$$2y=24$$

$$y=12$$

a) Model age

$$= 12$$

b) Medium age

$$12, 12, 13, 14, 29$$

$$= 13$$

14.

$$\text{Lenght y } AB = \frac{1}{2} \pi D$$

$$= \frac{1}{2} \times \frac{22}{7} \times 35 = 77\text{cm}$$

$$\text{Area top surface} = 50 \times 35 = 1,750\text{cm}^2$$

$$\text{Area of 2 semi-circular parts} = \frac{1}{2} \pi r^2 \times 2$$

$$= \frac{1}{2} \times \frac{22}{7} \times 17.5 \times 7.5 \times 2$$

$$= 962.5\text{cm}^2$$

15.