

PLE MATHEMATICS

Marking Guide

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Organised by

TR. FUUFU JOHN

0770805668 / 0756735240 (Watsap)

Email: fuufujohn1@gmail.com

⑫ 2 mangoes cost sh 2,000
 3 oranges cost sh 1,500
 Total cost = sh 2,000
 + sh 1,500
 sh 3,500

⑬ $M_9 = \{9, 18, 27, \dots\}$
 $78t \rightarrow 18$
 $7+8+t = 18$
 $15-15+t = 18-15$
 $t = 3$

⑭ Average = $\frac{\text{Sum of items}}{\text{No. of items}}$
 $= \frac{62+73+78}{3}$
 $= \frac{213}{3}$
 $= 71$

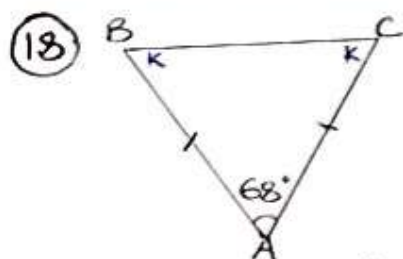
62
 73
 + 78

 213

Average = 71

⑮ $SP = BP - L$
 sh 45,000
 - sh 1,500

 $SP = \text{sh } 43,500$



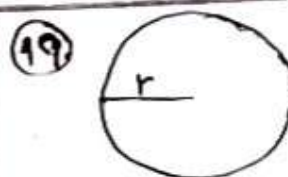
$k + k + 68^\circ = 180^\circ$
 $2k + 68^\circ = 180^\circ$
 $2k + 68^\circ - 68^\circ = 180^\circ - 68^\circ$
 $2k = 112^\circ$
 $k = 56^\circ$
 $\angle ABC = 56^\circ$

180
 - 68

 112



⑱ $52-2r-32-r$
 $52-32-2r-r$
 $20-3r$



$C = 88\text{cm}$
 $r = ??$

$2\pi r = C$
 $2 \times \frac{22}{7} \times r = 88\text{cm}$
 $7 \times \frac{44r}{7} = 88\text{cm} \times 7$
 $\frac{44r}{7} = \frac{88\text{cm} \times 7}{44}$
 $r = 2\text{cm} \times 7$
 $r = 14\text{cm}$

(20)

1st term

2nd term

$$\frac{20}{25}$$

$$\frac{18}{20}$$

÷	25	20
2	25	10
2	25	5
5	5	1
5	1	1

or →

1st term

2nd term

$$\frac{20}{25} \div 5$$

$$\frac{4}{5}$$

$$\frac{4}{5}$$

$$\frac{18}{20} \div 2$$

$$\frac{9}{10}$$

$$\frac{9}{10}$$

 $M_5 = \{5, 10, 15, 20, 25, 30, 35, 40, 45, 50, \dots\}$
 $M_{10} = \{10, 20, 30, \dots\}$

LCM = 10

$$\frac{4}{5} \times 10^2$$

$$4 \times 2$$

$$8$$

$$\frac{9}{10} \times 10^1$$

$$9$$

$$9$$

The pupil performed better in the second term test.

$$LCD = 2 \times 2 \times 5 \times 5$$

$$= 10 \times 10$$

$$LCD = 100$$

1st term

2nd term

$$\frac{20}{25} \times 100$$

$$25$$

$$20 \times 4$$

$$80$$

$$\frac{18}{20} \times 100$$

$$20$$

$$18 \times 5$$

$$90$$

The pupil performed better in the second term test

SECTION B: (60 MARKS)

(21) (a) $\frac{1}{2} - \frac{1}{4} \div \frac{4}{5}$

$$\frac{1}{2} - \left(\frac{1}{4} \div \frac{4}{5} \right)$$

$$\frac{1}{2} - \left(\frac{1}{4} \times \frac{5}{4} \right)$$

$$\frac{1}{2} - \frac{5}{16}$$

LCD = 16

$$\frac{8 - 5}{16} = \frac{3}{16}$$

(b) 0.27×1.2

$$\frac{0.27}{0.9}$$

$$\left(\frac{27}{100} \times \frac{12}{10} \right) \div \left(\frac{9}{10} \right)$$

$$\frac{27}{100} \times \frac{12}{10} \times \frac{10}{9}$$

$$\frac{3 \times 12 \times 1}{100 \times 1 \times 1}$$

$$\frac{36}{100}$$

0.36

(22) $400 \text{ m} / 48 \text{ sec} \rightarrow \text{km/hr}$

$$\frac{400 \text{ m}}{48 \text{ sec}} = \frac{400 \text{ km}}{1000} \div \frac{48 \text{ hr}}{3600}$$

$$= \frac{4}{10} \text{ km} \times \frac{3600}{48 \text{ hr}}$$

$$= \frac{5 \text{ km} \times 6}{\text{hr}}$$

$400 \text{ m} / 48 \text{ sec} = 30 \text{ km/hr}$

Method 2

$$S = \frac{D}{T}$$

$$S = \frac{25 \text{ m}}{48 \text{ sec}}$$

$$S = 25 \text{ m} / 3 \text{ sec}$$

$25 \text{ m} / 3 \text{ sec} \rightarrow \text{km/hr}$

$$1000 \text{ m} = 1 \text{ km}$$

$$25 \text{ m} = \frac{25}{1000} \text{ km}$$

$$3600 \text{ sec} = 1 \text{ hr}$$

$$3 \text{ sec} = \frac{3}{3600} \text{ hr}$$

$$\frac{25 \text{ m}}{3 \text{ sec}} = \frac{25 \text{ km}}{1000} \div \frac{3 \text{ hr}}{3600}$$

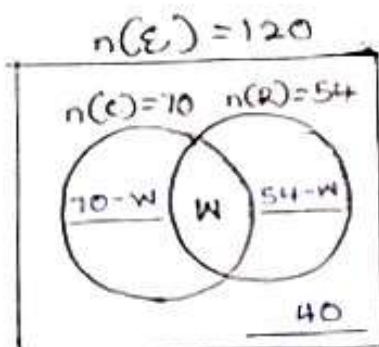
$$= \frac{25}{1000} \text{ km} \times \frac{3600}{3 \text{ hr}}$$

$$= \frac{5 \text{ km} \times 6}{\text{hr}}$$

$25 \text{ m} / 3 \text{ sec} = 30 \text{ km/hr}$

(23)

(a)

method 2

$$\begin{aligned}
 70 + 40 + 54 - W &= 120 \\
 164 - W &= 120 \\
 164 - 164 - W &= 120 - 164 \\
 -W &= -44 \\
 -1 & \quad -1 \\
 W &= 44
 \end{aligned}$$

There were 44 guests

(b) Method 1

$$\begin{aligned}
 W &= (70 + 54 + 40) - 120 \\
 W &= 164 - 120 \\
 W &= 44
 \end{aligned}$$

There were 44 guests

Method 3

$$\begin{aligned}
 70 - W + W + 54 - W + 40 &= 120 \\
 70 + 54 + 40 - W + W - W &= 120 \\
 164 - W &= 120 \\
 164 - 164 - W &= 120 - 164 \\
 -W &= -44 \\
 -(-W) &= -(-44) \\
 W &= 44
 \end{aligned}$$

There were 44 guests

(24) a) GCF of 126, 90 and 72

\div	126	90	72
2	63	45	36
3	21	15	12
3	7	5	4

$$\begin{aligned}
 \text{GCF} &= 2 \times 3 \times 3 \\
 &= 18
 \end{aligned}$$

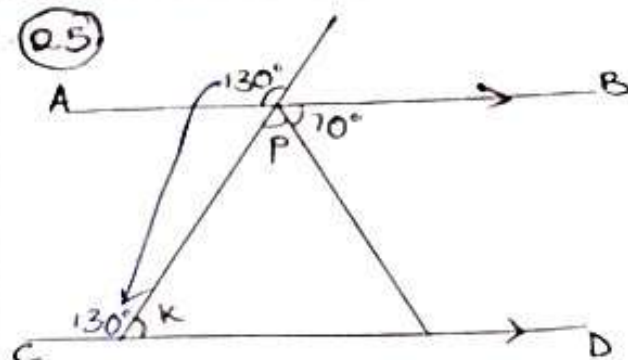
The largest number is 18 pupils

(b) In Primary Five

$$\begin{array}{r}
 747 \\
 +26 \\
 \hline
 182
 \end{array}$$

7 groups

(25)



$$\begin{aligned}
 (a) \quad P + 70^\circ &= 130^\circ \text{ (vert. opp. } \angle) \\
 P + 70^\circ - 70^\circ &= 130^\circ - 70^\circ \\
 P &= 60^\circ
 \end{aligned}$$

$$\begin{aligned}
 \text{or} \\
 P + 70^\circ &= 130^\circ \text{ (alt. int. } \angle) \\
 P + 70^\circ - 70^\circ &= 130^\circ - 70^\circ \\
 P &= 60^\circ \quad \text{etc}
 \end{aligned}$$

$$\begin{aligned}
 (b) \quad K + 130^\circ &= 180^\circ \text{ (straight } \angle) \\
 K + 130^\circ - 130^\circ &= 180^\circ - 130^\circ \\
 K &= 50^\circ
 \end{aligned}$$

etc

- 26 Total mass
(a) 40×250 grammes
10000 grammes

kg	Hg	Dg	G
1	0	0	0

$$1000g = 1kg$$

$$10,000g = \frac{10000}{1000} kg$$

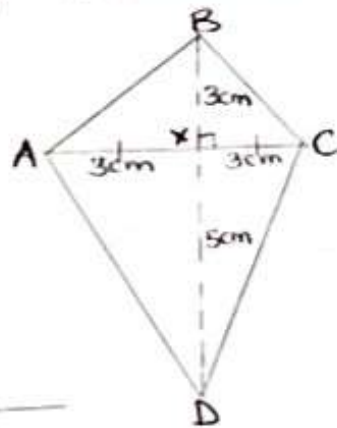
$$10,000g = 10 kg$$

- (b)

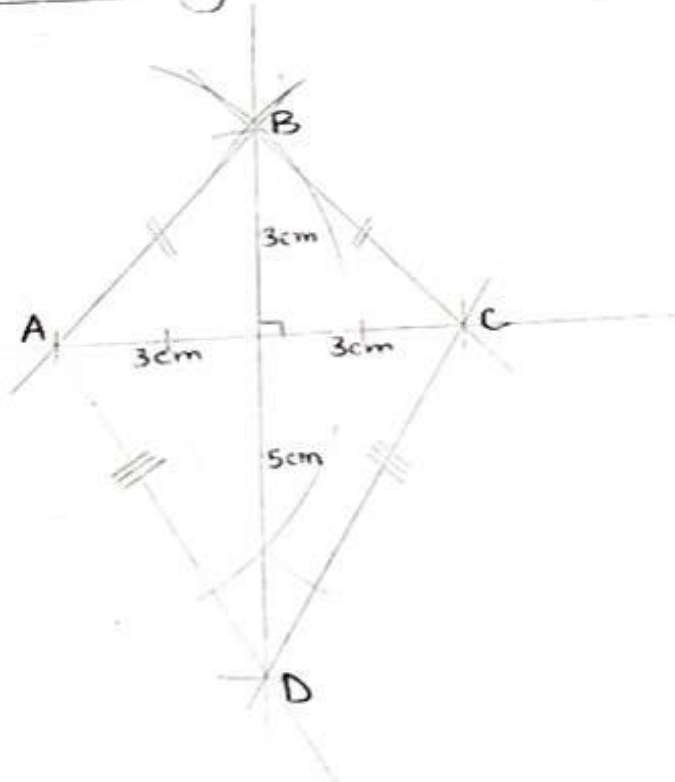
Packets	Days
1 packet	takes 5 days
40 packets	take 40×5 days
4 packets	take 200 days

27

sketch



Accurate diagram



(28) a) Let the daughter's age be a .

	Daughter	Man
Now age	a	$4a$
6 years ago	$a - 6$	$4a - 6$

$$(a - 6) + (4a - 6) = 48$$

$$a - 6 + 4a - 6 = 48$$

$$a + 4a - 6 - 6 = 48$$

$$5a - 12 = 48$$

$$5a - 12 + 12 = 48 + 12$$

$$\frac{5a}{5} = \frac{60}{5}$$

$$a = 12$$

(b) $4a - 6$

$$4 \times 12 - 6$$

$$48 - 6$$

$$42 \text{ years}$$

The daughter is 12 years old now.

(29)

Currency	Buying in Ug.sh	Selling in Ug.sh
1 Kenya shilling (Ksh)	24	26
1 US dollar (\$)	3,900	3,950
1 pound (£)	4,400	4,700

a) £1 = Ug.sh 4,400
 £600 = Ug.sh 4,400 \times 600
 £600 = Ug.sh 2,640,000

$$\begin{array}{r} 24 \\ \times 6 \\ \hline 264 \end{array}$$

(b) US \$1 = Ug.sh 3,900
 US \$ 200 = Ug.sh 3,900 \times 200
 US \$ 200 = Ug.sh 780,000

$$\begin{array}{r} 39 \\ \times 2 \\ \hline 78 \end{array}$$

Ug.sh 26 = K.sh 1
 Ug.sh 780,000 = $\frac{780,000}{26}$
 = K.sh 30,000

$$\begin{array}{r} 26 \\ \times 3 \\ \hline 78 \end{array}$$

30. (a)

Method 1

In 1 day the first worker digs $\frac{1}{6}$ of the garden.
In 1 day the 2nd worker digs $\frac{1}{3}$ of the garden.
In 1 day both workers dig $\frac{1}{6} + \frac{1}{3}$ of the garden.

$$\begin{aligned}\frac{1}{6} + \frac{1}{3} &= \frac{1+2}{6} \\ &= \frac{3}{6} \\ &= \frac{1}{2}\end{aligned}$$

$$1 \div \frac{1}{2}$$

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

2

They took 2 days

Method 2

$$\begin{aligned}\text{Period} &= \frac{\text{Product}}{\text{Sum}} \\ &= \frac{6 \times 3}{6 + 3} \\ &= \frac{18}{9}\end{aligned}$$

Period = 2 days

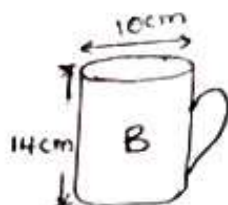
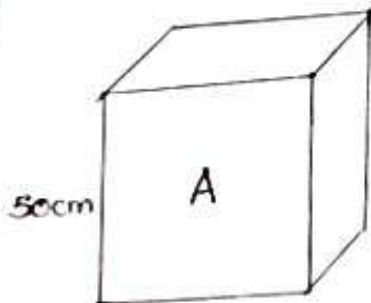
(b) $2(2 \times \text{sh } 15,000)$

$2 \times \text{sh } 30,000$

sh 60,000

The farmer spent sh 60,000

(31)



$$(a) V = \pi r^2 \times h$$

$$V = \frac{22}{7} \times \frac{10\text{cm}}{2} \times \frac{10\text{cm}}{2} \times 14\text{cm}$$

$$V = 11 \times 10\text{cm} \times 10\text{cm} \times 1\text{cm}$$

$$V = 11 \times 100\text{cm}^3$$

$$V = 1100\text{cm}^3$$

(b) Volume of container A

$$V = 1100\text{cm}^3 \times 40$$

$$V = 44,000\text{cm}^3$$

$$BA \times H = \text{Vol.}$$

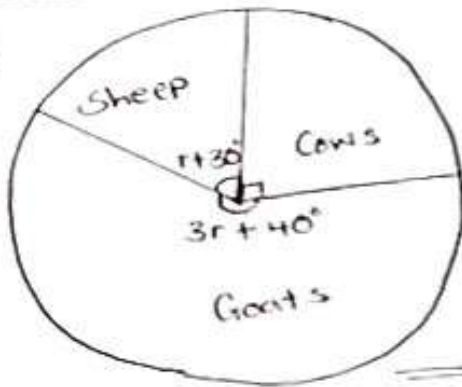
$$BA = \frac{\text{Vol}}{H}$$

$$\text{Base area} = \frac{44,000\text{cm}^3}{50\text{cm}}$$

$$\text{Base area} = \frac{880}{50\text{cm}}$$

$$\text{Base area} = 880\text{cm}^2$$

(32)



$$\begin{aligned}
 (a) \quad & 3r + 40^\circ + r + 30^\circ + 90^\circ = 360^\circ \\
 & 3r + r + 40^\circ + 30^\circ + 90^\circ = 360^\circ \\
 & 4r + 160^\circ = 360^\circ \\
 & 4r + 160^\circ - 160^\circ = 360^\circ - 160^\circ \\
 & 4r = 200^\circ \\
 & \frac{4r}{4} = \frac{200^\circ}{4} \\
 & r = 50^\circ
 \end{aligned}$$

(b) Difference in degrees

$$\begin{aligned}
 & (3r + 40^\circ) - (r + 30^\circ) \\
 & (3 \times 50^\circ + 40^\circ) - (50^\circ + 30^\circ) \\
 & 190^\circ - 80^\circ \\
 & \underline{110^\circ}
 \end{aligned}$$

Method 1

$$\begin{aligned}
 & 110^\circ \text{ rep. } 11 \text{ animals} \\
 & 1^\circ \text{ reps } \left(\frac{11}{110^\circ}\right) \text{ animals} \\
 & 360^\circ \text{ rep. } \frac{11}{110^\circ} \times 360^\circ \\
 & \quad \quad \quad 36 \text{ animals}
 \end{aligned}$$

Method 2

Let the total no. of animals be a.

$$\frac{110^\circ}{360^\circ} \text{ of } a = 11$$

$$\frac{110^\circ}{360^\circ} \times a = 11$$

$$36 \times \frac{11a}{36} = 11 \times 36$$

$$\frac{11a}{11} = \frac{11 \times 36}{11}$$

$$a = 36$$

There are 36 animalsmethod 3

$$11 \div \frac{110^\circ}{360^\circ}$$

$$\frac{11}{1} \times \frac{360^\circ}{110^\circ} = 36 \text{ animals}$$