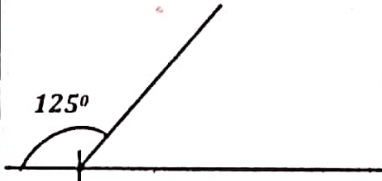




# THE PRIME MAGIC SET II EXAMINATIONS 2024

## P.7 MATHEMATICS MARKING GUIDE

### SECTION A (40 MARKS)

NO	SOLUTION	MARKS	COMMENT	NO	SOLUTION	MARKS	COMMENT
1	$\square \div 4 = 11$ $\square = 11 \times 4$ $\square = 44$	M <sub>1</sub> A <sub>1</sub>	Follow through	2	<div>Units</div> <div>402</div> $402 = CDII$	B <sub>2</sub>	Follow through
3	$6p - 9 + 3p - 5$ $= 6p + 3p - 9 - 5$ $= 9p - 14$	B <sub>2</sub>	Follow through	4	<div>Hr min</div> <div>9: 15</div> <div>+ 6: 45</div> <div>16: 00 hr</div> <div>1600hrs - 4:00pm</div>	B <sub>1</sub> B <sub>1</sub>	Follow through
5	$= \{w, x, y, z, f, c\}$ $= 6$	B <sub>2</sub>	Follow through	6	$\frac{53}{10} \times 1000$ $5300\text{kg}$ $5300 \times 1000$ $5300000\text{gm}$	B <sub>2</sub>	Follow through
7	{1, 2, 4, 7, 14, 28}	B <sub>2</sub>	Follow through	8		B <sub>2</sub>	Follow through
9	$11 - 18$ $11 + 18$ $= 27$	M <sub>1</sub> A <sub>1</sub>	Follow through	10	<div>T O</div> <div>4 3</div> <div>4 0</div>	B <sub>1</sub> B <sub>1</sub>	Follow through
11	$= \text{£} \left( \frac{\text{Ugsh.}141000}{\text{Ugsh.}4700} \right)$ $= \text{£}30$	M <sub>1</sub> A <sub>1</sub>	Follow through	12	$24 \text{ eggs} = 2$ $1 \text{ egg} = \frac{2}{24}$ $60 \text{ eggs} = \frac{2}{24} \times 60$ $= \frac{12}{60}$ $= 5 \text{ eggs}$ 	B <sub>2</sub>	Follow through
13	$= 27 + 9 \div 9$ $27 + 1$ $= 28$	M <sub>1</sub> A <sub>1</sub>	Follow through	14	$r + 50^\circ + 65^\circ = 180^\circ$ $r + 115^\circ = 180^\circ$ $r = 180^\circ - 115^\circ$ $r = 65^\circ$	B <sub>1</sub> B <sub>1</sub>	Follow through
15	$= 36 - 8$ $= 44^\circ\text{C}$	M <sub>1</sub> A <sub>1</sub>	Follow through	16		B <sub>1</sub> B <sub>1</sub>	Follow through
17	$= (100 + 8\frac{1}{3})\% = 108\frac{1}{3}\%$ $\frac{21}{6300} \times \frac{325}{300}$ $= 6825 \text{ books}$	M <sub>1</sub> A <sub>1</sub>	Follow through				

18	$-4 - 2p > -16$ $-2p > -16 + 4$ $-2p > -12$ $-2p < -12$ $-2 \quad -2$ $p < 6$	M <sub>1</sub>	Follow through	A <sub>1</sub>
19	$1\text{km} = 1000\text{m}$ $5\text{m/s} = \frac{5}{1000} \text{km} \div \frac{1}{3600} \text{h}$ $= \frac{1}{1000} \text{km} \times \frac{18}{3600} \text{h}$ $= 18\text{km/h}$	M <sub>1</sub>	Follow through	A <sub>1</sub>
20	$\frac{20}{\text{sh.10000}}$ $\text{sh.500}$ $= 20 \text{ coins.}$	M <sub>1</sub>	Follow through	A <sub>1</sub>

### SECTION B (60 Marks)

21	<p>(a) <math>2w + 5 = 25</math>  <math>2w + 5 - 5 = 25 - 5</math>  <math>\frac{2w}{2} = \frac{20}{2}</math>  <math>w = 10</math></p> <p>b) <math>2w + 3w - 4</math>  <math>5w - 4</math>  <math>5 \times 10 - 4</math>  <math>50 - 4</math>  <math>= 44 \text{ players.}</math></p>	05						
22	<table border="1"> <tr> <td>Eggs sh 250 x 20 sh 5000</td> <td>Sugar 1750 sh.7000 x <math>\frac{5}{4}</math> sh. 8750</td> <td>Cooking oil = sh.2400 x <math>\frac{2}{1}</math> = 4800</td> </tr> <tr> <td>Total sh 8750 sh 5000 +sh 4800 sh 16150</td> <td>balance sh.17000 -sh 16150 sh 850</td> <td></td> </tr> </table>	Eggs sh 250 x 20 sh 5000	Sugar 1750 sh.7000 x $\frac{5}{4}$ sh. 8750	Cooking oil = sh.2400 x $\frac{2}{1}$ = 4800	Total sh 8750 sh 5000 +sh 4800 sh 16150	balance sh.17000 -sh 16150 sh 850		05
Eggs sh 250 x 20 sh 5000	Sugar 1750 sh.7000 x $\frac{5}{4}$ sh. 8750	Cooking oil = sh.2400 x $\frac{2}{1}$ = 4800						
Total sh 8750 sh 5000 +sh 4800 sh 16150	balance sh.17000 -sh 16150 sh 850							

23 a)  $103_{\text{four}}$   
 $\begin{array}{r} 210 \\ 103_{\text{four}} \end{array}$   
 $(1 \times 4^2) + (0 \times 4^1) + (3 \times 4^0)$   
 $(4 \times 4) + (0 \times 4) + (3 \times 1)$   
 $16 + 0 + 3$   
 $19_{\text{ten}}$

b)

FF	F	O
3	1	2

Ones

c)  $101_{\text{two}}$   
 $\begin{array}{r} 101_{\text{two}} \\ \times 11_{\text{two}} \\ \hline 101 \\ +101 \\ \hline 1111_{\text{two}} \end{array}$

24	<p>a)</p> <table> <tr> <th>Atim</th><th>Benitah</th><th>Christiana</th></tr> <tr> <td><math>d + 15</math></td><td><math>d</math></td><td><math>d + 15 - 18</math></td></tr> <tr> <td><math>23 + 15</math></td><td>23</td><td><math>d - 3</math></td></tr> <tr> <td>38</td><td></td><td><math>23 - 3</math></td></tr> <tr> <td></td><td></td><td>20</td></tr> </table> <p>Total age = <math>(38 + 23 + 20)\text{yr}</math>  <math>= 81\text{ years}</math></p> <p>b) <math>23 - 15 = 8</math>  Atim was <math>38 - 8</math>  <math>= 30\text{ yrs.}</math></p>	Atim	Benitah	Christiana	$d + 15$	$d$	$d + 15 - 18$	$23 + 15$	23	$d - 3$	38		$23 - 3$			20	<p><math>B_1</math></p> <p><math>B_1</math></p> <p><math>B_1</math></p> <p><math>M_1</math></p> <p><math>A_1</math></p> <p>05</p>	Follow through
Atim	Benitah	Christiana																
$d + 15$	$d$	$d + 15 - 18$																
$23 + 15$	23	$d - 3$																
38		$23 - 3$																
		20																



25

$$a) \frac{1}{2} \times \pi D + D = 108 \text{ cm}$$

$$\frac{1}{2} \times \frac{22}{7} D + D = 108$$

$$7 \times \frac{11D}{7} + D \times 7 = 108 \times 7$$

$$11D + 7D = 108 \times 7$$

$$\frac{18D}{18} = \frac{756}{18}$$

$$D = 42 \text{ cm}$$

$$R = \frac{21}{2} \times \frac{42 \text{ cm}}{2}$$

$$R = 21 \text{ cm}$$

$$b) A = \frac{1}{2} \times \pi r^2$$

$$A = \frac{1}{2} \times \frac{22}{7} \times 21 \times 21 \text{ cm}^2$$

$$A = 693 \text{ cm}^2$$

M<sub>1</sub>

Follow through

M<sub>1</sub>A<sub>1</sub>M<sub>1</sub>A<sub>1</sub>

05

26

a)

	Tom	Rem	Sam	T + S
$\frac{3}{4}$	$\frac{2}{5} \times \frac{3}{4}$	$\frac{3}{4} - \frac{6}{20}$	$\frac{2}{3}$ of $\frac{4}{20}$	$\frac{6}{20} + \frac{3}{10}$
	$\frac{6}{20}$	$\frac{15-6}{20}$	$\frac{3}{10}$	$\frac{6+6}{20}$
		$\frac{9}{20}$		$\frac{12}{20}$
				$\frac{3}{5}$

Fraction left

$$\frac{3}{4} - \frac{3}{5} = \frac{15-9}{20}$$

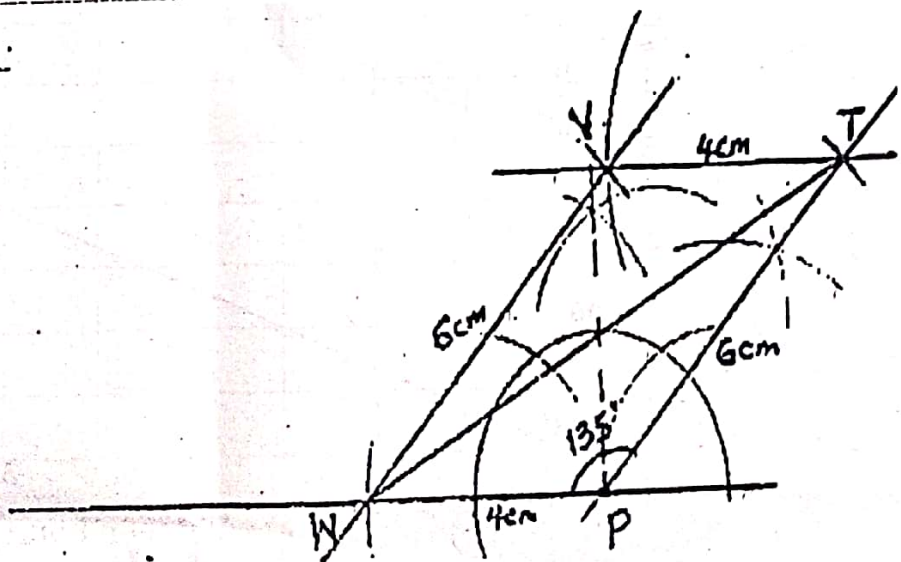
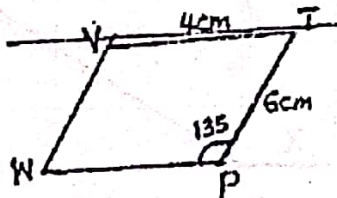
$$= \frac{6}{20}$$

$$= \frac{3}{10}$$

05

27

Sketch.



b) Line TW = 9.2 ± cm.

05

28

a)

$$TR = 2 + 5 + 1 = 8$$

$$= 135 \div \frac{5}{8}$$

$$= 135 \times \frac{8}{5}$$

$$= 216 \text{ oranges}$$

$$b) = 216 \times \frac{1}{4}$$

$$= 54 \text{ oranges}$$

05

29

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

$$= \frac{22}{7} \times \frac{28}{10} \times \frac{28}{10} \times 50 \text{ cm}^3$$

$$= 1232 \text{ cm}^3$$

$$\text{Capacity} = \frac{1232 \text{ cm}^3}{1000 \text{ cm}^3}$$

$$1.232 \text{ litres.}$$

$$b) 2 \times \frac{22}{7} \times \frac{28 \text{ cm}}{10} \times 50 \text{ cm}$$

$$88 \text{ cm}^2 \times 2$$

$$176 \text{ cm}^2$$

M<sub>1</sub>A<sub>1</sub>M<sub>1</sub>A<sub>1</sub>

05

Follow through

30

$$a) \quad 45^\circ$$

$$\text{Ext} < = \frac{360}{5}$$

$$= 45^\circ$$

$$\text{Int} < = 180^\circ - 45^\circ$$

$$= 135^\circ$$

$$b) = 180^\circ(n - 2)$$

$$= 180^\circ(8 - 2)$$

$$= 180^\circ \times 6$$

$$= 1080^\circ$$

05

31

$$= (36 \text{ kg} \times 5) = 180 \text{ kg}$$

$$= (40 \text{ kg} \times 3) = 120 \text{ kg}$$

$$= \frac{(180 + 120) + 100 \text{ kg}}{5 + 3 + 2}$$

$$= \frac{400 \text{ kg}}{10}$$

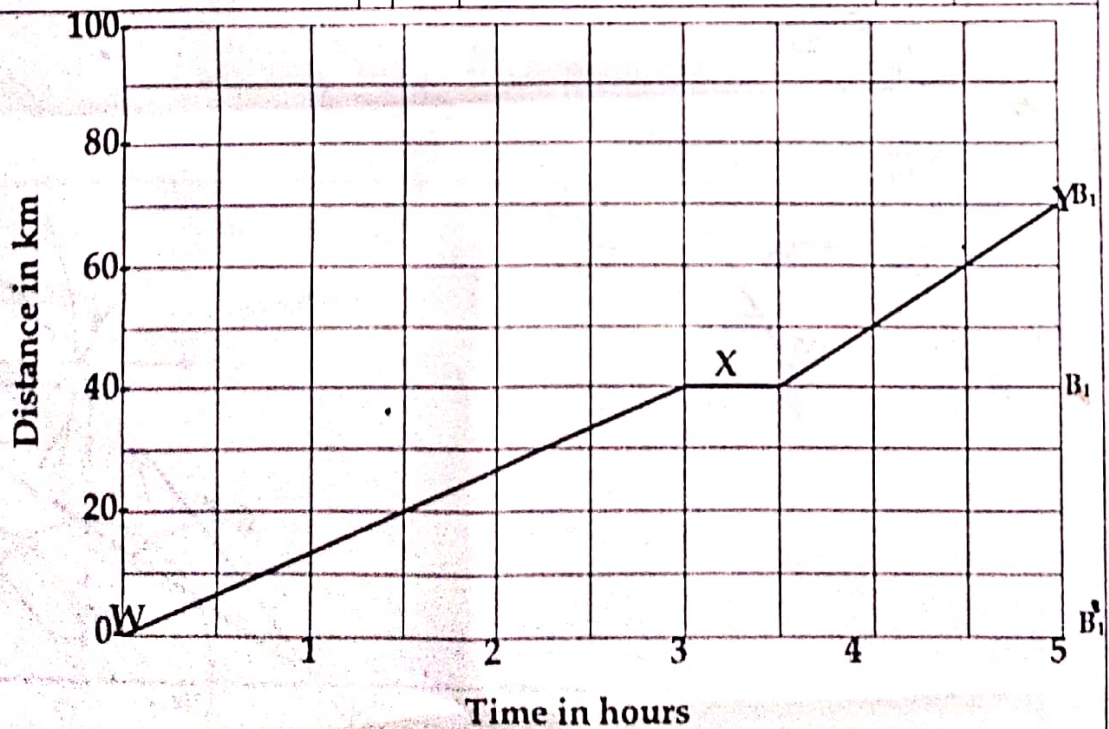
$$= 40 \text{ kg}$$

M<sub>1</sub>A<sub>1</sub>M<sub>1</sub>A<sub>1</sub>

05

Follow through

32



$$b) \text{ A.S} = \frac{70 \text{ km}}{5 \text{ hrs}}$$

$$= 14 \text{ km/h}$$