

SECTION A

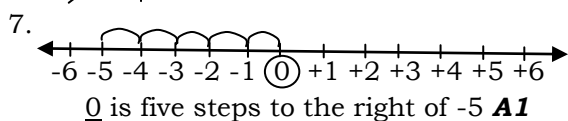
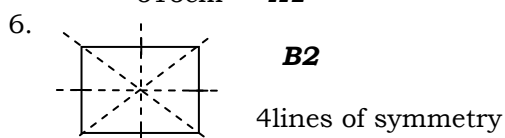
$$\begin{array}{r} 21 \\ + 71 \\ \hline 92 \end{array} \quad \mathbf{B2}$$

$$\begin{array}{r} 2000 \\ 400 \\ + 6 \\ \hline 2406 \end{array} \quad \mathbf{M1} \quad \mathbf{A1}$$

$$\begin{array}{l} 2y + 3y + y \quad \mathbf{M1} \\ 5y + y \\ 6y \quad \mathbf{A1} \end{array}$$

4. Set $M = \{2, 3, 5, 7\}$
M is a set of the first four prime numbers. **B1**

$$\begin{array}{l} 5. \quad 2R = 1 \text{ Diameter} \\ A = \pi r^2 \\ = \frac{22}{7} \times 14^2 \times 14 \text{cm} \quad \mathbf{M1} \\ = 22 \times 2 \times 14 \\ = 616 \text{cm}^2 \quad \mathbf{A1} \end{array}$$



$$\begin{array}{l} 8. \quad \frac{\text{Sum of item}}{\text{No. of item}} = \text{Mean} \\ \frac{Y + 4 + 6 + 8 + 9}{5} = 6 \times 5 \quad \mathbf{M1} \\ y + 27 = 30 \\ - 27 \quad - 27 \\ \hline Y = 3 \quad \mathbf{A1} \end{array}$$

$$\begin{array}{r} 9. \quad 8.5 (6+14) \quad \text{P.W} \\ 8.5 \times 20 \quad \mathbf{M1} \\ 10 \\ 170 \quad \mathbf{A1} \end{array} \quad \begin{array}{r} 85 \\ \times 2 \\ \hline 170 \end{array}$$

10. In a day
1 person is paid sh. 5500
3 persons are paid sh. 5500 x 3
sh. 16,500 **M1**
In 4 days
shs. 16500 x 4
shs. 66,000 **A1**

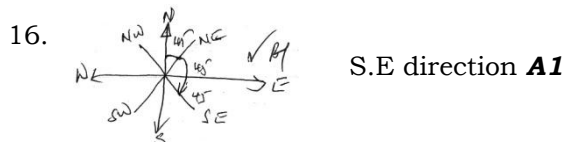
$$\begin{array}{l} 11. \quad 1 \text{ tonnes} = 1000 \text{kg} \\ 80 \text{ tonnes} = \frac{8.09 \times 1000}{100} \quad \mathbf{M1} \\ = 8090 \text{kg} \quad \mathbf{A1} \end{array}$$

$$\begin{array}{l} 12. \quad \text{Length} = \text{Interval (las pole} - 1^{\text{st}} \text{ pole)} \\ = 10 \text{m} (62 - 1) \quad \mathbf{M1} \\ 10 \text{m} \times 61 \\ 610 \text{meters} \quad \mathbf{A1} \end{array}$$

$$13. \quad \angle ABC = 40^\circ \quad \mathbf{B2}$$

$$\begin{array}{r} 14. \quad \begin{array}{r} 6430 \\ \quad \quad \quad \rightarrow 3 \times 10 = 30 \\ \quad \quad \quad \rightarrow 4 \times 100 = 400 \quad \mathbf{M1} \end{array} \quad \left| \quad \begin{array}{r} \text{Sum} \\ 400 \\ + 30 \\ \hline 430 \quad \mathbf{A1} \end{array} \right. \end{array}$$

$$\begin{array}{l} 15. \quad 48 + (48 \div 48) \\ 48 \div 48 = 1 \quad \mathbf{M1} \\ 48 + 1 = 49 \quad \mathbf{A1} \end{array}$$



$$\begin{array}{r} 17. \quad \begin{array}{r} 49.9 \\ + 1 \\ \hline 50.0 \end{array} \quad \left| \quad \begin{array}{l} \text{R.P.V - tenth} \\ \text{upwards - add + 1} \\ \text{downwards - add + 0} \quad \mathbf{B1} \end{array} \right. \\ 50.0 \end{array}$$

$$\begin{array}{l} 18. \quad XY^2 = XW^2 + WY^2 \\ = 42 + 32 \\ = 16 + 9 \quad \mathbf{M1} \\ \sqrt{XY^2} = \sqrt{25} \\ XY = 5 \text{dm} \quad \mathbf{A1} \end{array}$$

$$\begin{array}{l} 19. \quad 12, 14, 36, 48, 60, 72 \quad \mathbf{B1} \\ 36 - 12 = 24 \quad \left| \quad \begin{array}{l} \text{Sum} = 24 + 60 \\ = 84 \quad \mathbf{A1} \end{array} \right. \\ 48 + 12 = 60 \end{array}$$

$$\begin{array}{l} 20. \quad \text{New\%} = 100\% + 20\% \\ = 120\% \quad \mathbf{M1} \end{array} \quad \left| \quad \begin{array}{l} \text{New no. of learners} \\ \frac{120}{100} \times 46^9 \\ = 6 \times 9 \\ = 54 \text{ learners} \quad \mathbf{A1} \end{array} \right.$$

SECTION B

$$\begin{array}{l} 21a) \quad \left(\frac{27}{10} \times \frac{48}{10} \right) \div \left(\frac{24}{10} \times \frac{36}{10} \right) \\ \frac{27^3}{10_1} \times \frac{48^2}{10_1} \times \frac{10^1}{24_2} \times \frac{10^1}{36_2} \quad \mathbf{M1} \\ \frac{3 \times 1 \times 1 \times 1}{1 \times 1 \times 1 \times 2} \\ \frac{3}{2} = 1\frac{1}{2} \\ 1.5 \quad \mathbf{A1} \end{array}$$

$$\begin{array}{l} b) \quad \frac{37}{15} + \frac{3}{7} \div \frac{9}{14} \times \frac{4}{5} \\ \frac{37}{15} + \left(\frac{3^1}{7_1} \times \frac{14^2}{9_3} \times \frac{4}{5} \right) \quad \mathbf{M1} \\ \frac{37}{15} + \frac{8}{15} \\ \frac{45^3}{15_1} \\ = 3 \quad \mathbf{A1} \end{array}$$

$$\begin{array}{l} 22a) \quad 2n + 3n - 4 = 21 \\ 5n - 4 + 4 = 21 + 4 \quad \mathbf{M1} \\ \frac{5n}{5} = \frac{25^3}{5} \\ n = 5 \quad \mathbf{A1} \end{array}$$

$$\begin{aligned} \text{b) } K + 2 + K &= 14 \\ 2K + 2 + 2 &= 14 - 2 \quad \mathbf{M1} \\ \frac{2K}{2} &= \frac{12}{2} \\ K &= 6 \quad \mathbf{A1} \end{aligned}$$

$$\begin{aligned} \text{c) } K + K + 2 + 2n + 3n - 4 \\ 6 + 6 + 2 + 2(5) + 3(5) - 4 \\ 6 + 3 + 10 + 15 - 4 \quad \mathbf{B1} \\ 14 + 25 - 4 \\ 38 - 4 \\ 35 \quad \mathbf{A1} \end{aligned}$$

$$\begin{aligned} \text{23a) L.C.M} &= F_K \cup F_F \\ &= 2_1 \times 2_2 \times 2_3 \times 3_1 \times 7_1 \\ &= 2 \times 2 \times 2 \times 3 \times 7 \quad \mathbf{M1} \\ &= 24 \times 7 \\ &= 168 \quad \mathbf{A1} \end{aligned}$$

$$\begin{aligned} \text{b) } F &= 2_1 \times 2_2 \times 2_3 \times 3_1 \\ &= 2 \times 2 \times 2 \times 3 \\ &= 8 \times 3 \\ &= 24 \quad \mathbf{A1} \end{aligned}$$

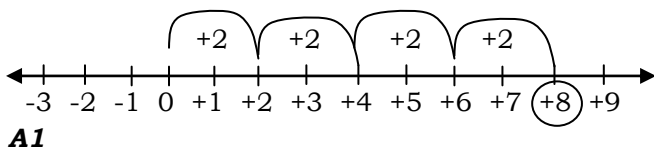
$$\begin{aligned} K &= 2_1 \times 3_1 \times 7_1 \\ &= 2 \times 3 \times 7 \\ &= 6 \times 7 \\ &= 42 \quad \mathbf{A1} \end{aligned}$$

$$\begin{array}{rcl} \text{24a) Hr} & \text{Min} & \\ 9 & 10 & + \frac{10}{60} \\ - & 45 & \mathbf{M1} \\ \hline 8 : 25 & & \frac{-45}{25} = 8:25\text{am} \quad \mathbf{A1} \end{array}$$

$$\begin{array}{r} \text{b) } 07 \text{ 24hrs} \\ - 00.00 \\ \hline 7:24\text{am} \quad \mathbf{B1} \end{array}$$

$$\begin{aligned} \text{c) Dist} &= S \times T \\ &= \frac{120}{60} \times \frac{20}{60} \quad (1\text{hr} = 60\text{mins}) \\ &= 40\text{km} \quad \mathbf{A1} \end{aligned}$$

$$\text{25a) } (4) \text{ Groups of } (+2)$$



$$\begin{aligned} \text{b) } 20 &\geq 3p + 5 \geq 11 \\ 20 - 5 &\geq 3p + 5 - 5 \geq 11 - 5 \quad \mathbf{M1} \\ \frac{15}{3} &\geq \frac{3p}{3} \geq \frac{6}{3} \\ 5 &\geq p \geq 2 \quad \mathbf{A1} \\ \therefore \{2, 3, 4, 5\} &\quad \mathbf{B1} \end{aligned}$$

$$\text{26a) } 8 \text{ vertices} \quad \mathbf{B1}$$

$$\begin{aligned} \text{b) } A &= L \times W \\ &= 7 \times 4\text{dm} \quad \mathbf{M1} \\ A &= 28\text{dm}^2 \quad \mathbf{A1} \end{aligned}$$

$$\begin{aligned} \text{c) Length of all edges} &= (4l) + (4w) + (4h) \\ (\text{Sum}) &= 4 \times 7 + 4 \times 4 + 4 \times 5\text{dm} \\ &= 28 + 16 + 20\text{dm} \quad \mathbf{M1} \\ &= 28 + 36 \\ \text{Sum of all edges} &= 64\text{dm} \quad \mathbf{A1} \end{aligned}$$

$$\begin{aligned} \text{27a) } K + 70 + 70 &= 1800 \\ K + 140 - 140 &= 180 - 140 \quad \mathbf{M1} \\ K &= 40 \quad \mathbf{A1} \end{aligned}$$

$$\begin{aligned} \text{b) } 2W + 3W + 90^\circ &= 180^\circ \\ 5W + 90 - 90 &= 180 - 90^\circ \\ \frac{5W}{5} &= \frac{90}{5} \\ W &= 18^\circ \quad \mathbf{B1} \\ / 3W &= 3 \times 18 \\ &= 54^\circ \quad \mathbf{B1} \end{aligned}$$

$$\text{28a) } \frac{\text{Big ratio}}{\text{Small ratio}} \times \text{No. given}$$

$$\frac{6}{5} \times \frac{60}{72} = 12$$

$$\begin{array}{c|c|c|c} \text{b) L.C.M of } 2, 3, 5 & 2 & 3 & 5 \\ \hline & 3 & 1 & 3 & 5 \\ & 5 & 1 & 1 & 5 \\ & 1 & 1 & 1 & \end{array}$$

$$2 \times 3 \times 3 = 30$$

$$\begin{array}{c|c|c} 1 \times \frac{30}{2} & 2 \times \frac{30}{3} & 3 \times \frac{30}{5} \\ \hline \frac{15}{1} & \frac{20}{1} & \frac{18}{1} \end{array}$$

$$\left(\frac{2}{3} \frac{3}{5} \frac{1}{2} \right) \quad \mathbf{B1}$$

$$\begin{aligned} \text{29. Interest} &= PRT \\ &= \text{Sh } 1,200,000 \times 15 \times \frac{2}{100} \quad \mathbf{M1} \\ &= \text{Sh. } 360,000 \quad \mathbf{A1} \end{aligned}$$

$$\begin{aligned} \text{Amount} &= P + I \\ &= \text{Sh. } 1,200,000 + 360,000 \quad \mathbf{M1} \\ &= \text{Sh. } 1,560,000 \quad \mathbf{A1} \end{aligned}$$

$$\begin{aligned} \text{30a) Tue} + 17 &= \text{ } \quad (\text{finite } 7) \\ 2 + 17 &= \text{ } \quad (\text{finite } 7) \quad \mathbf{B1} \\ 19 \div 7 &= 2 \text{ r } 5 \\ \text{It will be Friday} &\quad \mathbf{B1} \end{aligned}$$

b) <u>Correct</u>	<u>Wrong</u>	<u>Total</u>
Qns - x	25 - x	- 25
Marks - 4(x)	1(25 - x)	- 70 mks

$$(4x) - 1(25 - x) = 70$$

$$4x - 25 + x = 70$$

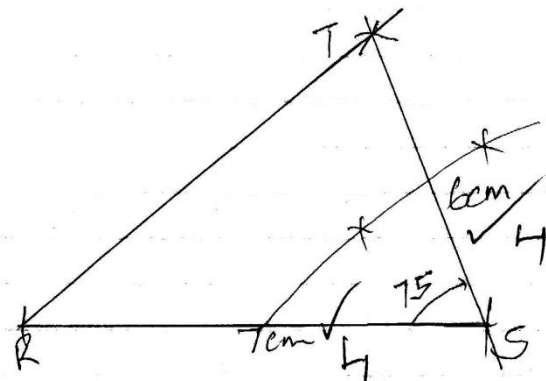
$$4x + x - 25 + 25 = 70$$

$$\frac{5x}{5} = \frac{95}{5}$$

$$x = 19$$

x = 19 questions

31a)



b) RT = 7.9cm/ 8.0cm/ 7.8cm **B1**

32a) 70 eggs were collected on Thursday **B1**

b) Wednesday had the highest of eggs collected. **B1**

c) Average = $\frac{\text{Sum of items}}{\text{No. of items}}$

$$= \frac{40 + 60 + 110 + 70 + 40}{5} \text{ eggs } \mathbf{M1}$$

$$= \frac{100 + 80 + 40}{5} \mathbf{M1}$$

$$= \frac{280 + 40}{5}$$

$$= \frac{320}{5}$$

$$= 64 \text{ eggs } \mathbf{A1}$$