P.7 MATHEMATICS MARKING GUIDE SPECIAL PRE PLE SET 6 2024

PRE PLE MTC GUIDE SET 6 2024

1.

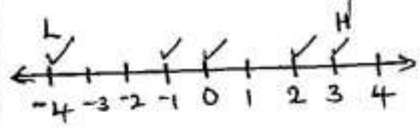
$$\begin{array}{r} 5\ 4 \\ -1\ 3 \\ \hline 4\ 1 \end{array}$$ ✓ B2

2. Twenty four thousand ninety nine ✓ B2

3. $(Q \cap P)' = \{c, d, f, g, h, k, y\}$ ✓ B1

$\therefore n(Q \cap P)' = 7$ ✓ B1

4.



Range = H − L

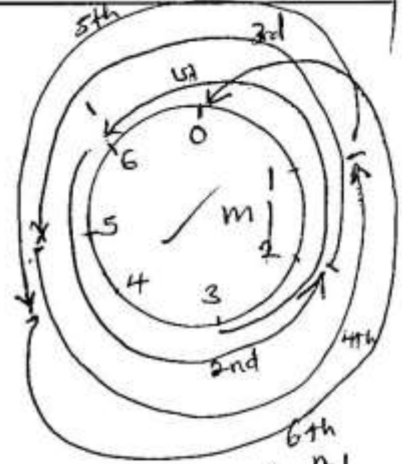
$3 - {}^{-}4$

$3 - ({}^{-}4)$

$3 + 4$ ✓ M1

7 ✓ B1

5.



A1

$\therefore 3 \div 4 = 6 \pmod 7$

6. $7n - (3n - 5)$

$7n - 3n + 5$ ✓ M1

$4n + 5$ ✓ M1

7. $Y = {}^{+}3$ ✓ B1

$X = {}^{-}3$ ✓ B1

8) $\frac{n(n+1)}{2}$

$7\frac{(7+1)}{2}$ ✓ M1

$7\left(\frac{8}{2}\right)$

$7 \times 4 = 28$ ✓ A1

9) $9 - 3d > 3$

$9 - 9 - 3d > 3 - 9$ ✓ M1

$-3d > -6$

$\frac{-3d}{-3} < \frac{-6}{-3}$

$d < 2$ ✓ A1

10) $\frac{3}{4} \div 1\frac{1}{4}$

$\frac{3}{4} \div \frac{5}{4}$ ✓ M1

$\frac{3}{4} \times \frac{4}{5}$

$\frac{3}{5}$ ✓ A1

11)

$\frac{6}{4} = 1\ \text{rem}\ 2$

$$\begin{array}{r} 2\ 3_{four} \\ \times\ 1\ 2_{four} \\ \hline 1\ 0\ 3\ 2 \\ +\ 2\ 1\ 3\ 0 \\ \hline 3\ 2\ 2\ 2_{four} \end{array}$$

✓ M1, ✓ A1

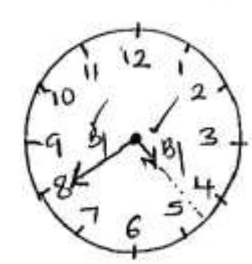
12) 0.040

$0.040 \times 10 = 0.40$ ✓ M1

$0.40 \times 10 = 4.0$

$\therefore 0.040 = 4.0 \times 10^{-2}$ ✓ A1

13)



14) 72, 47, 31, 22, 18, 17 ✓ A1

−25, −16, −9, −4, −1 ✓ M1

(Subtraction of square numbers)

15)

Old	New
100%	$(100 - 7\frac{1}{2})\%$ $92\frac{1}{2}\%$
	Sh. 18,500

$92\frac{1}{2}\%$ rept Sh. 18,500 ✓

1% repts Sh. $18{,}500 \div 92\frac{1}{2}$

1% repts Sh. $18500 \div \frac{185}{2}$

1% repts Sh. $18500 \times \frac{2}{185}$

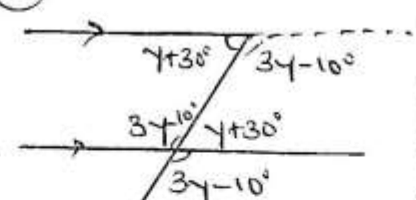
1% repts Sh. 200 ✓ B1

Original price

Sh. 200×100

Sh. 20,000 ✓ A1

16



$3y - 10° + y + 30° = 180°$ ✓ M1

$4y + 30° - 10° = 180°$

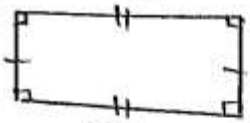
$4y + 20° - 20° = 180° - 20°$

$4y = 160°$

$\frac{4y}{4} = \frac{160°}{4}$

$y = 40°$ ✓ A1

17. Sketch



Total distance

$2(L+W)$

$2(28m+12m)$

$2(40m)$

$2 \times 40m$

$80m$ ✓B1

No of poles = $\frac{T.D}{1nt}$

$\frac{80m}{4m}$

$\frac{20}{\cancel{80}}$

$\frac{}{\cancel{4}}$

1 ✓B1

20 poles

18

$\left(\frac{504}{72}\right)$ boxes ✓M1

$\left(\frac{\cancel{504}}{\cancel{72}}\right)$ boxes

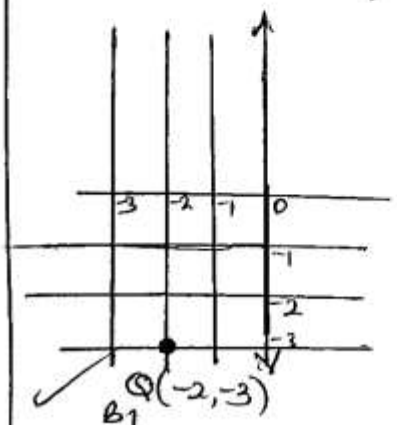
1

7 boxes A1 ✓

72 ✓
+72 ✓
144
+72 ✓
216
+72 ✓
288
+72 ✓
360
+72 ✓
432
+72 ✓
504

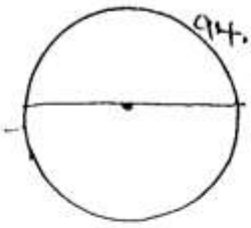
19 a) P(0, 3) ✓B1

b)



B1

20)



$\pi D = C$

$3.14 \times D = 94.2cm$

$\frac{314}{100} \times D = \frac{942cm}{10}$ ✓M1

$\frac{\cancel{314}}{\cancel{100}} \times D \times \cancel{100}^{1} = \frac{942 \times 10}{10}$

$314D = 9420cm$

$\frac{\cancel{314}D}{\cancel{314}} = \frac{9420cm}{314}$

$D = 30cm$ ✓A1

∴ The length of the bar is 30cm.

SECTION B

21) a) 4 7 5 2

Smallest number

2457

$5 \times 10 = 50$ ✓B1

2×1000

2000 ✓B1

Difference

21000 ✓M1

− 50

1950 ✓A1

22 a)

$7+11-(2y-3) = 6y$

$7+11-2y+3 = 6$

$y-2y+11+3 = 6$

$-y+14 = 6$

$-y+14-14 = 6-14$

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

$y = 8$ A1

(11) Total

$2y-3+y-2+y+11+y$ ✓M1

$2 \times 8-3+8-2+8+11+8-5$

$16-3+6+19+3$

$13+28$

41 pupils ✓A1

(b) Debating

$6+19$

25 ✓B1

probability = $\frac{n(E)}{n(SS)}$

$\frac{25}{41}$ ✓B1

23 a)

Sh. 50,000

Sh. 10,000

5 notes ✓B1

20,000

Sh. ~~80,000~~

Sh. 20,000 ✓B1

Total amount

Sh. 100,000

Sh. 80,000

+ Sh. 50,000

Sh. 230,000 ✓B1

(b) Amount used

Sh. $230,000 \times \frac{80}{100}$

Sh. $\overset{2}{2}3000 \times 8$

Sh. 184,000 ✓B1

Change = Sh. $230,000$ ✓M1

− Sh. 184,000

Sh. 46,000 A1

24. Bars of Soap

7 × 30

210 bars

Buying price

Sh. 150,000 × 7

Sh. 1,050,000 ✓B1

210 − 150 ✓B1

60 bars of soap

Selling price

Sh. 7000 × 150 | Sh. 7500 × 60

Sh. 1050000 | Sh. 450,000 ✓B1

Sh. 1,050,000 ✓B1

Total Selling price

Sh. 1,050,000

+ Sh. 450,000

Sh. 1,500,000 ✓B1

Profit he made

Sh. 1,500,000

− Sh. 1,050,000

Sh. 450,000 ✓B1

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

$\frac{(2\times15)+(h\times10)+(1\times5)+(4\times24)}{h+7} = 14.5$ ✓M1

$\frac{10h+30+5+80}{h+7} = 14.5$

$\frac{(10h+115)}{(h+7)} \times (h+7) = \frac{145}{10}(h+7)$

$10h + 115 = \frac{145h+1015}{10}$

$10h\times10 + 115\times10 = \frac{(145h+1015)}{10}\times10$

$100h + 1150 = 145h + 1015$

$-100h \quad\quad -100h$

$145h + 1015 = 100h + 1150$

$-1015 \quad\quad -1015$

$45h = 135$

$\frac{45h}{45} = \frac{135}{45}$

$h = 3$ ✓A1

$2 + h + 1 + 4$

$2 + 3 + 1 + 4$

10 Schools ✓B1

26) a)

Covered	Uncovered
$\frac{2\phi}{10\phi}$	$\frac{4}{5}$ ✓
$\frac{1}{5}$ ✓	
40km	160km

4 parts repr 160km ✓

1 part repr $\frac{160}{4}$ km

1 part repr 40km ✓B1

Journey before

1 × 40km

40km ✓B1

(b)

4 parts repr 24 litres

1 part repr $\frac{24}{4}$ litres

1 part repr 6 litres ✓B1

Fuel for the whole Journey:

5 × 6 litres

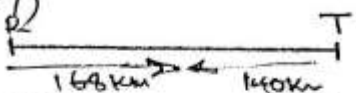
30 litres ✓B1

Amount

Sh. 4800 × 30

Sh. 144,000 ✓B1

27)



Distance covered after 2 hours and 20 minutes

1 hr = 60 min

$\frac{60}{3}$ min

$\frac{1}{3}$ hr

Time = $2\frac{1}{3}$ hrs ✓B1

Taxi	Bus
D = S × T	D = S × T
$72km \times 2\frac{1}{3}$ hr	$\frac{20}{60}km \times \frac{7}{3}$ hr
$72km \times \frac{7}{3}$	D = 20km × 7
24 km × 7	D = 140 km ✓B1
168 km ✓B1	

Distance from R to T

168km ✓M1

+ 140km

308km ✓A1

28)

Data

Rate = $6\frac{1}{2}$ %

$\frac{13}{2}$ %

$\frac{13}{2} \div \frac{100}{1}$

$\frac{13}{2} \times \frac{1}{100}$

Rate = $\frac{13}{200}$

Time = 6 months

Amount = Sh. 417,000

28.

$P + S.I = Amount$

$P + P \times R \times T = Amount$

$P + P \times \frac{13}{100} \times 6^3 = Sh.417,000$ ✓m|

$P + \frac{39P}{100} = Sh.417000$

$P \times 100 + \frac{39P}{100} \times 100 = Sh.417000 \times 100$ ✓m|

$100P + 39P = Sh.41,700,000$ m|

$139P = Sh.41,700,000$

$\frac{139P}{139} = \frac{Sh.41,700,000}{139}$ m|

$P = Sh.300,000$ ✓A|

∴ He doposited Sh. 300,000 in the bank.

29. a)

Volume of A

$\pi r^2 \times H$

$\frac{22}{7} \times \frac{70cm}{2} \times \frac{70}{2}cm \times 40cm$ ✓m|

$\frac{11}{\cancel{22}} \times \frac{\cancel{10}}{\cancel{70}} \times \frac{70}{\cancel{2}}cm \times \frac{\cancel{20}}{\cancel{40}}cm$

$110cm \times 1400cm^2$

$154000\ cm^3$ ✓A|

Capacity of A

1 litre = 1000cc

$\frac{154000cc}{1000\ cc}$ ✓

154 litres B|

Full small containers

$\frac{154}{10}$

15 Small ✓ Containers. B|

b)

15 × 10 litres

150 litres ✓

154 litres

− 150 litres m|

4 litres ✓ A|

30. Let the correct be c

Correct	Wrong	Award
c	20 − c	✓B1
5c	−2(20 − c)	58

$5c + -40 + 2c = 58$ ✓m|

$5c + 2c - 40 = 58$

$7c - 40 = 58$

$7c - 40 + 40 = 58 + 40$ ✓m|

$7c = 98$

$\frac{7c}{7} = \frac{98}{7}$

$c = 14$ ✓A|

∴ She got 14 correct questions.

31.

$S \times S = \text{Area}$

$S^2 = 784\,m^2$ ✓M1

$S^2 = 2^4 \times 7^2 \times m^2$

$\sqrt{S^2} = \sqrt{2^4}\,\sqrt{7^2}\,\sqrt{m^2}$

$S = 2 \times 2 \times 7 \times m$

$S = 4 \times 7\ m$

$S = 28\ m$ ✓A1

Factor tree: 784 → 2, 392 → 2, 196 → 2, 98 → 2, 49 → 7, 7 → 7, 1

$2d = 28\,m$

$\frac{2d}{2} = \frac{28m}{2}$

$d = 14\,m$ ✓B1

$\text{Area} = \frac{1}{2}\pi r^2 \times 2$

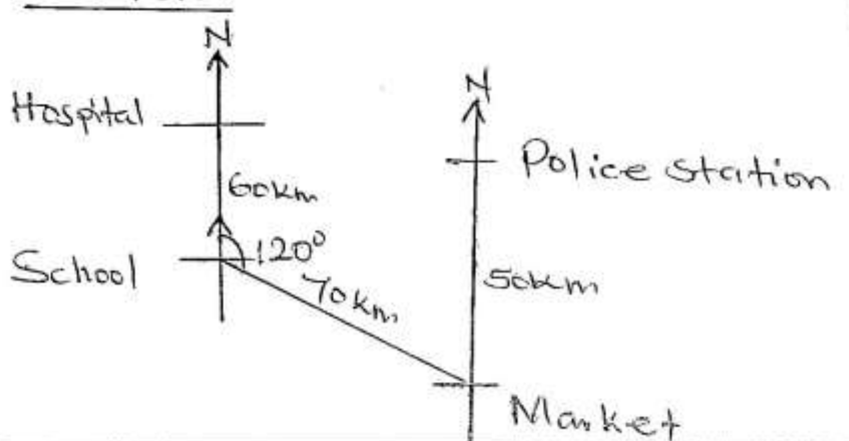
$\frac{22}{7} \times \frac{14m}{2} \times \frac{14m}{2}$

$= 154\,m^2$ ✓B1

Area of the room that is not covered with the mats

$784\,m^2 - 154\,m^2 = 630\,m^2$ ✓B1

32. Sketch



Scale

1 cm rep 10 km

$\frac{60km}{10km} = 6\,cm$

$\frac{70km}{10km} = 7\,cm$

$\frac{50km}{10km} = 5\,cm$

Accurate diagram