P.7 PRE-PLE SET XIV MATHS MARKING GUIDE, 2024

S/N	SOLUTION	MRKS	COMMENTS
1.	385 − 162 = 223	M_1 A_1	For correct subtraction For 223
2.	5y − (3y + 4) + 2 5y − 3y − 4 + 2 2y − 2	M_1 A_1	For collection of like terms For 2y − 2
3.	Cone	B_2	For cone
4.	1kg = 1000gms $4\frac{1}{2} = 4\frac{1}{2} \times 1000$gms $= 9 \times 500$gms = 4500gms A sacket = 500gms ? Sackets = 4500gms / 500gms = 9 sackets	B_1 B_1	For 4500gms For 9 sackets
5.	Die = {1, 2, 3, 4, 5, 6} faces = 6 Prime numbers = {2, 3, 5} = 3 Probability = EOC / POC Probability = $\frac{3}{6}$	B_1 B_1	For identifying correct numerals For $\frac{3}{6}$
6.	2, 3, 7, 16, 32, 57 +1 +4 +9 +16 +25 Square numbers (i) 16 + 16 = 32 (ii) 32 + 25 = 57	B_1 B_1	For 32 For 57
7.	SI = P x R x T Shs. 20,000 = Shs. $\frac{800000}{40} \times \frac{5}{100} \times \frac{T}{12}$ 3 x Shs. 20,000 = Shs. 10,000 x $\frac{T}{3}$ x 3 Shs. 60,000 = Shs. 10,000 T Shs. 10,000 Shs. 10,000 Time = 6 months	M_1 A_1	For correct method For 6 months
8.	1011_{two} $= (1 \times 2^3) + (0 \times 2^2) + (1 \times 2^1) + (1 \times 2^0)$ $= 1 \times 2 \times 2 \times 2 + 0 + 1 \times 2 + 1 \times 1$ $= 8 + 0 + 2 + 1$ $= 11_{ten}$	B_1 B_1	For correct method For 11_{ten}
9.	Volume = Area x h = 616cm² x 20cm = 12320cm³	M_1 A_1	For correct multiplication For 12320cm³
10.	Amount = meals + desserts x 2 = Shs. 15000 + Shs. 4000 x 2 = Shs. 19000 x 2 = Shs. 38000	M_1 A_1	For correct method For Shs. 38000
11.	$3074 = 3074 \div 10$ $= 307.4 \div 10$ $= 30.74 \div 10$ $= 3.074 \times 10^{+3}$	M_1 A_1	For correct method For $3.074 \times 10^{+3}$
12.	$r^2 = 196m$ $\sqrt{r^2} = \sqrt{196}m$ $\sqrt{r^2} \times r = \sqrt{14}m \times 14m$ r = 14m	M_1 A_1	For correct method For r = 14m
13.	300US dollars cost Ug Shs. 1110000 1US dollar costs Ug Shs. $\frac{1110000}{300}$ = Ug Shs. 3700 1US dollar costs Ug Shs. 3700	M_1 A_1	For correct division For 1 US dollar costs Ug Shs. 3700
14.	140^0	B_2	For 140^0
15.	$7 - 2n \geq -3$ $7 - 2n + 2n \geq -3 + 3$ $7 + 3 \geq 2n$ $\frac{10}{2} \geq \frac{2n}{2}$ $5 \geq n$	M_1 A_1	For collection of like terms For $5 \geq n$
16.	Subsets = {c, u, p}, {c}, {u}, {p}, { } {c, u} {u, p} {c, p}	B_1 B_1	For 1st 4 subsets For all 8 subsets
17.	340.07 $= (3 \times 10^2) + (4 \times 10^1) + (0 \times 10^0) + (0 \times 10^{-1}) + (7 \times 10^{-2})$	B_2	For C.AO
18.	$\frac{\text{No} \times 60 \times 60\text{m/sec}}{1000}$ $\frac{20 \times 60 \times 60}{1000}$km/hr 26 x 2 km/hr = 72km/hr	M_1 A_1	For correct method For 72km/hr

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19.	Let the number be y $\frac{20}{100}$ of y = $\frac{1}{3}$ of 30 $\frac{20}{100} \times y = \frac{1}{3} \times 30$ $100 \times \frac{20}{100} \times y = 10 \times 100$ $20y = 1000$ $\frac{20}{20} \quad \frac{20}{20}$ y = 50	M_1 A_1	For forming equation For 50
20.	3 − 5 = t (finite 6) (3 + 6) − 5 = t (finite 6) 9 − 5 = t (finite 6) 4 = t (finite 6) 3 − 5 = 4 (finite 6)	M_1 A_1	For correct method For t = 4 (finite 6)
21.	(a) $n(\mathcal{E}) = 54$ $n(R) = y$ $n(P) = 23$ y − 6	6	17	7 (b) y − 6 + 6 + 17 + 7 = 54 y + 24 = 54 y = 54 − 24 y = 30 Number of candidates = 17 + y − 6 = 17 + 30 − 6 = 17 + 24 = 41 candidates	B_1 M_1 A_1 B_1	For y − 6 For forming equation For y = 30 For 41 candidates
22.	(a) (No x 2) − 1 (25 x 2) − 1 trees 50 − 1 trees 49 trees	M_1 A_1	For correct method For 49 trees
	(b) Buying price = $\frac{60}{480} \times$ Shs. 1000 = Shs. 60,000 Selling price = $\frac{80}{480} \times$ Shs. 1200 = Shs. 96,000 Profit = S. Price − B. Price = Shs. 96000 − Shs. 60000 = Shs. 36,000	B_1 B_1 B_1	For Shs. 60,000 For Shs. 96,000 For Shs. 36,000
23.	Total of 15 people − Total of 14 workers (a) = 15 x 51kg − 14 x 50kg = 765kg − 700kg = 65kg (b) Average = $\frac{\text{Sum}}{\text{Number of items}}$ $= \frac{(p \times 2) + (12 \times 3) + (10 \times 1) + (8 \times 4) + (13 \times 2)}{12}$ $= \frac{2p + 36 + 10 + 32 + 26}{12} = 10$ years $\frac{12 \times 2p + 104}{12} = 10$ years x 12 2p + 104 = 120years 2p = 120 − 104 years $\frac{2p}{2} = \frac{16^8}{2}$ p = 8 years	M_1 A_1 M_1 A_1	For correct method For 65kg For correct method For p = 8 years
24.	(i) $3n + 15^0 + 2n + 20^0 + 45^0 = 180^0$ $3n + 2n + 15^0 + 20^0 + 45^0 = 180^0$ $5n + 80^0 = 180^0$ $5n = 180^0 - 80^0$ $\frac{5n}{5} = \frac{100^{20}}{5}$ $n = 20^0$	M_1 A_1	For forming equation For $n = 20^0$

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	(ii) Angle CDB = $2n + 20^0 + 45^0$ $= (2 \times 20) + 65^0$ $= 40^0 + 65^0$ $= 105^0$	M_1 A_1	For correct substitution and use of angle properties For angle CDB = 105^0
	(b) $x + 100 \mid x$ $x + x + 100^0 = 180^0$ $2x + 100^0 = 180^0$ $2x = 180^0 - 100^0$ $\frac{2x}{2} = \frac{80^0}{2}$ 40 $x = 40^0$ Number of sides = $\frac{360^0}{\text{Exterior angle}}$ $= \frac{360^0}{40^0}$ = 9 sides	B_1 B_1 06	For exterior angle 40^0 For 9 sides
25.	(i) Books = $\frac{1}{2} \times$ Shs. 18000 $= \frac{1}{2} \times$ Shs. 18000 = Shs. 27000	B_1	For Shs. 27000
	(ii) Pens = 9 x Shs. 800 = Shs. 7200	B_1	For Shs. 7200
	(iii) A geometry set = Shs. 5500		
	(iv) Transport = $\frac{1}{2} \times$ Shs. 7200 = Shs. 3600	B_1	For Shs. 3600
	(v) Total = Shs. 16700 + 27000 + 7200 + 5500 + 3600 = Shs. 60,000	B_1 04	For Shs. 60,000
26.	(a) (i) $x = {}^-4$	B_1	For $x = {}^-4$
	(ii) $y = {}^+5$	B_1	For $y = {}^+5$
	(iii) $z = {}^-9$	B_1	For $z = {}^-9$
	(b) $x - y = z$ ${}^-4 - {}^+5 = {}^-9$	B_1 04	For ${}^-4 - {}^+5 = {}^-9$

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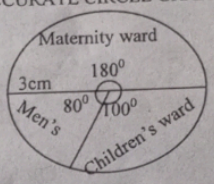
27.	(a) $1 - \frac{1}{5} \div 2$ $\frac{5}{5} - \frac{1}{5} \div \frac{2}{1}$ $\frac{5 - 1}{5} \times \frac{1}{2}$ $\frac{4}{5} \times \frac{1}{2}$ $\frac{2}{5}$	M_1 A_1	For correct method For $\frac{2}{5}$
	(b) Let the amount be x $\frac{2}{5}$ of x = Shs. 30,000 $\frac{2}{5} \times \frac{2}{5} x$ = Shs. 30,000 x 5 $\frac{2x}{2} = \frac{\text{Shs. } 150000}{2}$ x = Shs. 15000 x 5 x = Shs. 75,000	M_1 A_1	For forming equation For Shs. 75,000
	(c) Abdul = $\frac{1}{5} + \frac{2}{5} \times 100\%$ $= \frac{1+2}{5} \times 100\%$ $= \frac{3}{5} \times 100\%$ $= 60\%$	M_1 A_1 06	For correct method For 60%
28.	Total = 90 + 50 + 40 = 180 patients Angles: (i) Maternity ward = $\frac{90}{180} \times 360^0$ $= 180^0$	B_1	For 180^0
	(ii) Children's ward = $\frac{50}{180} \times 360^0$ $= 100^0$	B_1	100^0
	(iv) Men's ward = $\frac{40}{180} \times 360^0$ $= 80^0$	B_1	For 80^0
	ACCURATE CIRCLE GRAPH  	C_1 04	For accurate circle graph of radius 3cm

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29.	(a) Area of semi-circle = $\frac{1}{2}\pi r^2$ $= \frac{1}{2} \times \frac{22}{7} \times 7m \times 7m$ $= 77m^2$	B_1	For $77m^2$
	Area of trapezium = $\frac{1}{2} h (a + b)$ $= \frac{1}{2} \times 14m (14m + 21m)$ $= 7 \times 35m$ $= 245m^2$	B_1	For $245m^2$
	Total area = $77m^2 + 245m^2$ $= 322m^2$	B_1	For $322m^2$
	(b) Circumference = $\frac{1}{2}\pi D$ $= \frac{1}{2} \times \frac{22}{7} \times 14m$ $= 22m$	B_1	For 22m
	Total distance = C + S + S + S = 22m + 12m + 14m + 21m = 69m	M_1 A_1 06	For correct addition For 69m
30.	(a) Distance village to town = Speed x Time $= \frac{90km/hr \times 1\frac{1}{3} hr}{hr \times hr}$ $= 90km \times \frac{4}{3}$ = 120km	B_1	For 120km
	Distance Town to school = Speed x Time $= \frac{90km/hr \times 2hr}{hr \times hr}$ = 90km x 2 = 180km	B_1	For 180km
	Total distance = 120km + 180km = 300km	B_1	For 300km
	(b) Average speed = $\frac{TDT}{TTT}$ $= 300km \div 1\frac{1}{2} + 2hrs$ $= 300km \div 3\frac{1}{2} hrs$ $= 300km \div \frac{10}{3} hr$ $= 300km \times \frac{3}{10} hr$ = 90km/hr	M_1 A_1 05	For correct method For 90km/hr

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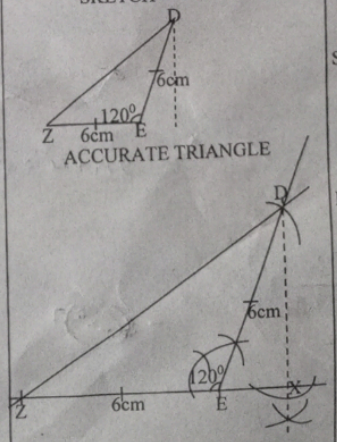
31.	(a) $(2x - 4)cm = (x + 8)cm$ $2x - 4 + 4 = (x - x + 8)cm$ $2x - x = 8 + 4cm$ $x = 12cm$	M_1 A_1	For forming and solving equation For $x = 12cm$
	(b) Volume = L^3 $= (x + 8)cm^3$ $= 12 + 8cm^3$ $= 20cm^3$ $= 20 \times 20 \times 20cm^3$ $= 8000cm^3$	M_1 A_1	For correct multiplication For $8000cm^3$
	(c) T.S.Area = $6(L^2)$ $= 6 (20cm^2)$ $= 6 \times 20 \times 20cm^2$ $= 6 \times 400cm^2$ $= 2400cm^2$	M_1 A_1 06	For correct method For $2400cm^2$
32.	SKETCH  ACCURATE TRIANGLE 	S_1 L_1 L_1 C_1 P_1 B_1 06	For correct sketch For side ZE = 6cm For side ED = 6cm For accurate angle 120^0 For perpendicular bisector DX For DX = 5.1cm ± 0.1cm