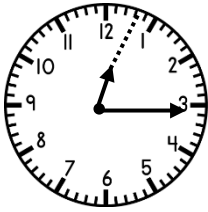
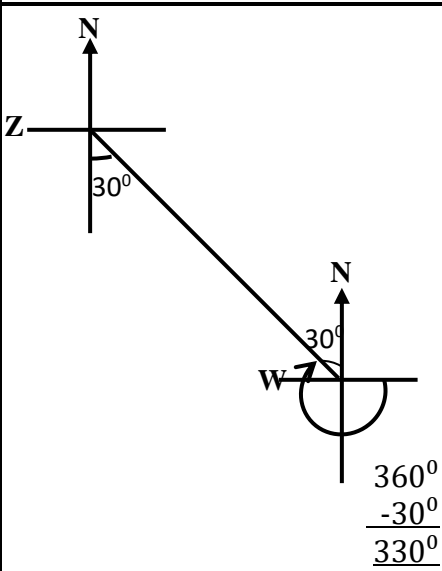

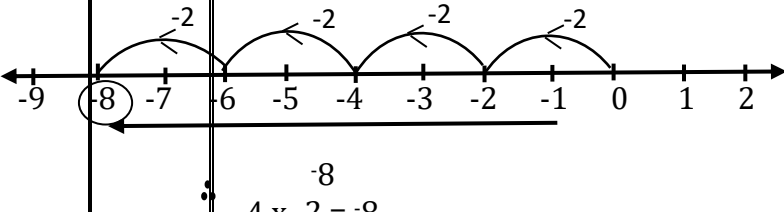


THE SIPRO PRE-PLE SET VI MATHEMATICS MARKING GUIDE 2024

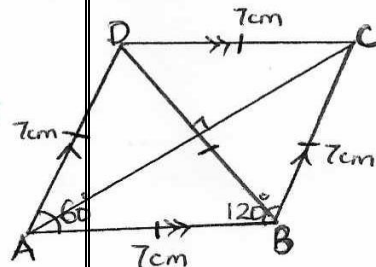
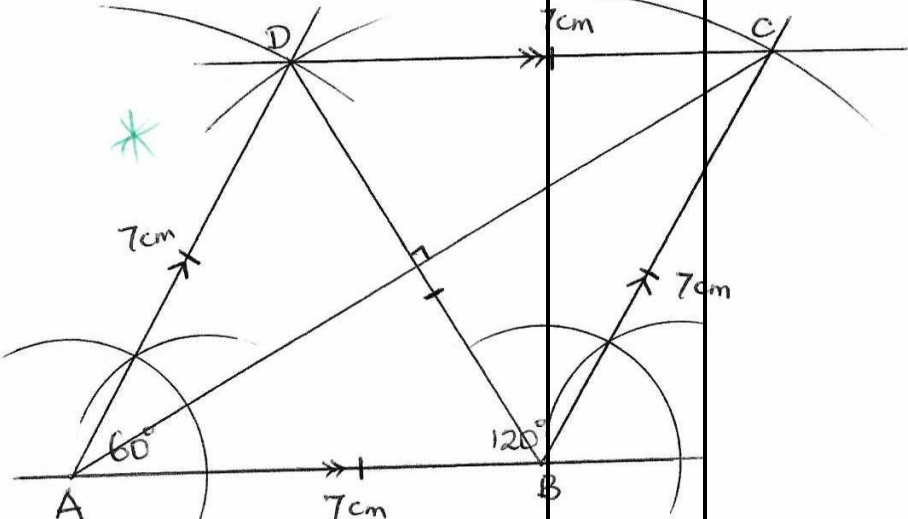
NO	LEVEL	SOLUTION	AWARD	REASON	COMMENT
1.	P.3	$\begin{array}{r} 302 \\ \times 3 \\ \hline 906 \end{array}$	B ₂	Award on sight of 906.	Revisit operations on whole numbers.
2.	P.7	Number of proper subsets $2^n - 1, n = 3$ $2^3 - 1$ $(2 \times 2 \times 2) - 1$ $8 - 1 = 7$ proper subsets	M ₁ A ₁	For the correct method. For 7 proper subsets.	Review subsets and their application.
3.	P.5	R=Highest – lowest $R = 6 - (-7)$ $R = 6 + 7$ $R = 13$	M ₁ A ₁	For the method. For 13	Give more practice questions on data handling.
4.	P.5	$\begin{array}{r} 3^{11} 1^2 \text{four} \\ + 33 \text{four} \\ \hline 1011 \text{four} \end{array}$ $\begin{array}{l} 2 + 3 = 5 \\ 5 \div 4 = 1 \text{rem} 1 \\ 1 + 1 + 3 = 5 \\ 5 \div 1 = 1 \text{rem} 1 \\ 1 + 3 = 4 \\ 4 \div 4 = 1 \text{rem} 0 \end{array}$	B ₂	For correct answer.	Review bases and their application.
5.	P.7	0015 hours = 12:15 	B ₁ B ₁	For 12:15am For the correct hour and minutes hands.	Revisit the 12 and 24 hour clock systems.
6.	P.6	$\frac{2e^0 + (3e - 10)^0}{1^0} = \frac{90}{1^0}$ $\begin{array}{l} 2e + 3e - 10 = 90 \\ 5e - 10 = 90 \\ 5e - 10 + 10 = 90 + 10 \\ \frac{5e}{5} = \frac{100}{5} \quad \begin{array}{l} 20 \\ 1 \end{array} \\ e = 20 \end{array}$	M ₁ A ₁	For correct equation. For 20	Give more practical questions on types of angles.
7.	P.7	$3 - 3h \geq 15$ $3 - 3 - 3h \geq 15 - 3$ $-3h \geq 12$ $\frac{-3h}{-3} \leq \frac{12}{-3}$ $h \leq -4$	M ₁ A ₁	For method. For correct answer.	Emphasize sign change at division level.
8.	P.6	$F_p = \{n, 3_1, 3_2\}$ $F_q = \{3_1, 5_1, n\}$ $F_p \cap F_q = \{n, 3_1\}$ $3 \times n = 6$ $\frac{3n}{3} = \frac{6}{3}$ $n = 2$	M ₁ A ₁	For the correct method. For n=2	Review LCM and GCF and their application.

9.	P.5	$\frac{(5 \times 1)}{12} - \frac{(2 \times 1)}{12}$ $\frac{5}{12} - \frac{2}{12} = \frac{(5-2)}{12}$ $= \frac{3}{12} \div 3$ $= \frac{1}{4}$	M ₁ A ₁	For the correct method. For $\frac{1}{4}$	Review simplification of simple fractions.
10.	P.4	$\begin{array}{r} \text{Sp} = \text{Bp} + \text{p} \\ \text{Sh. } 25,000 \\ + \text{Sh. } 3,000 \\ \hline \text{Sh. } 28,000 \end{array}$	M ₁ A ¹	For addition For sh. 2,8000	Review profit and loss
11.	P.6	$2-5 = _ \text{ (finite 6)}$ $(2+6) - 5 = _ \text{ (finite 6)}$ $8 - 5 = 3 \text{ (finite 6)}$ $2 - 5 = 3 \text{ finite 6)}$	M ₁ A ₁	For the correct method. For 3(finite6)	Accept other correct approaches. Encourage candidates to write finite on each step.
12.	P.7	$C = 2\pi r$ $= 2 \times \frac{22}{7} \times 35 \text{ cm}$ $C = (44 \times 5) \text{ cm} \quad 44$ $C = 220 \text{ cm} \quad \underline{\times 5}$ $1 \text{ Hm} = 10,000 \text{ cm} \quad \underline{220}$ $11 \text{ Hm} = (11 \times 1000) \text{ cm}$ $= 110000 \text{ cm}$ Number of revolutions $\left(\frac{110000}{220} \right) \text{ revolutions}$ 500 revolutions.	B ₁ B ₁	For c = 220cm For 500 revolutions.	Revise application of circumference.
13	P.7	 <p>The bearing of town Z from town W is 330°</p>	M ₁ A ₁	For method. For 330°	Revisit bearing and scale drawing.

14	P.7	$\begin{array}{r} 3 \div 1 \\ 4 \ 2 \end{array} \times 180 \text{ goats}$ $\begin{array}{r} 3 \div 1 \\ 4 \ 2 \end{array} \times 180 \text{ goats.}$ $\begin{array}{r} 3 \times 2 \\ 4 \ 1 \end{array} \times 180 \text{ goats}$ $\begin{array}{r} 3 \times 180 \\ 2 \end{array} \text{ goats}$ $(3 \times 90) \text{ goats}$ 270 goats	M ₁ A ₁	For the correct method. For 270 goats	Emphasize the order of ratios.														
15	P.6	2 pictos represent 30 eggs 1 picto represents $\frac{30}{2}$ eggs 1 picto represents 15 eggs. Number of pictos $\frac{60}{15} = 4 \text{ pictos}$ 	B ₁ B ₁	For 4 pictos For correct drawing.	Review table graphs and picto graphs in data handling.														
16.	P.7	e = 4, n = -5, y = 3n y = 3x (n) y = 3 x -5 y = -15 value of (e-y) n (-4+15) (-5) 11x-5 <u>-55</u>	M ₁ A ₁	For correct substitution. For correct answer.	Revisit substitution and encourage candidates to change signs.														
17	P.7	$\frac{1}{4} (2\pi r) = c$ $\frac{1}{4} \times 22 \times r = 66 \text{ cm}$ $4 \times 2 = 7$ $7 \times 11r = 66 \text{ cm} \times 7$ $11r = \frac{66 \times 7}{11} \text{ cm}$ $r = \frac{6 \times 7}{1} \text{ cm}$ $r = 42 \text{ cm}$	M ₁ A ₁	For the method. For the correct answer.	Review Length, Mass and Capacity.														
18	P.6	$2^{3b} \div 2^b = 64$ $2^{3b-b} = 2^6$ $2^{2b} = 2^6$ $\frac{2b}{2} = \frac{6}{2}$ $b = 3$ <table border="1" data-bbox="560 1457 737 1719"><tr><td>2</td><td>64</td></tr><tr><td>2</td><td>32</td></tr><tr><td>2</td><td>16</td></tr><tr><td>2</td><td>8</td></tr><tr><td>2</td><td>4</td></tr><tr><td>2</td><td>2</td></tr><tr><td>1</td><td>1</td></tr></table>	2	64	2	32	2	16	2	8	2	4	2	2	1	1	M ₁ A ₁	For the method For b=3	Give more practice questions of indices.
2	64																		
2	32																		
2	16																		
2	8																		
2	4																		
2	2																		
1	1																		
19	P.5	D = S xT D = 120Km x <u>40</u> h $D = \frac{120 \times 40}{60} \text{ km}$ $D = (20 \times 4) \text{ km}$	M ₁	For the method.	Review Speed, Distance and Time.														

		<u>D = 80 km</u>	A ₁	For 80 km.	Emphasize units.
20	P.6		M ₁	For the method	Encourage candidates to interpret the question properly.
			A ₁	For -8	
21a)	P.6	$(3 \times 10^2) + (4 \times 10^1) + (6 \times 10^{-2})$ $(3 \times 10 \times 10) + (4 \times 10) + (6 \times \underline{1})$ 100 $300 + 40 + 0.06$ 340.06	M ₁	For the method	Review expansion of numbers.
			A ₁	For 340.06	
b)		$1095 \div 10 = 109.5$ $109.5 \div 10 = 10.95$ $10.95 \div 10 = 1.095$ $1095 = 1.095 \times 10^3$	M ₁	For the method.	Revisit standard form / scientific notation and its application.
			A ₁	For 1.095×10^3	
22a)		$4e-2+e = 38$ $4e+e-2 = 38$ $5e-2 = 38$ $5e-2+2 = 38+2$ $5e = 40$ ⁸ 5 5 $e = 8$	M ₁	For correct equation.	Review set concepts.
			A ₁	For $e = 8$	
b)		n (only one subject) n (S) only + n (E) only. $e+10 + 4e - 2$ $5e+8$ $(5 \times 8) + 8$ $40 + 8$ 48 pupils.	M ₁	For substitution.	Encourage candidates to comprehend the questions properly.
			A ₁	For 48	
23a)	P.6	1 British Pound costs Ug.sh 4,700 ?? ← Ug sh 1,410,000 $\left(\frac{\text{Ug sh } 1,410,000}{\text{Ug sh } 4700} \right)$ British Pound Sterling $\left(\frac{14100}{47} \right)$ British Pound Sterling. 300 British Pound Sterling.	M ₁	For the correct method.	Review exchange rates.
			A ₁	For 300 pounds.	
b)		1 US dollar costs Ug.sh. 3,600 325 US dollars cost Ug.sh. (3600×325) Ug.sh. 1,170,000 1 K sh costs Ug.sh. 30 ?? ← Ug.sh. 1,170,000 $\left(\frac{\text{Ug.sh } 1,170,000}{\text{Ug.sh } 30} \right)$ K.sh K.sh 39,000	B ₁	For multiplying.	Encourage candidates to show clear working.
			M ₁	For method.	
			A ₁	For K.sh 39,000	
24a)	P.5	(i) smallest numeral 3045 (ii) Largest numeral 5430	B ₁	For 3045	Encourage candidates to understand the positioning of zero.
			B ₁	For 5430	

b)		<table><tr><td>TH</td><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>0</td><td>4</td><td>5</td></tr></table>	TH	H	T	O					3	0	4	5	B ₁ B ₁	For beads For numbers	
TH	H	T	O														
3	0	4	5														
25a)	P.7	<table><tr><td>Exterior</td><td>Interior</td><td>Total</td></tr><tr><td>2x</td><td>3x</td><td>180⁰</td></tr></table> $2x + 3x = 180^0$ $\frac{5x}{5} = \frac{180^0}{5}$ $X = 36^0$ Number of sides: $\frac{360^0}{72^0}$ 5 sides. Name: pentagon	Exterior	Interior	Total	2x	3x	180 ⁰	B ₁ B ₁ B ₁	For 36 ⁰ For 10 sides. For Decagon	Review regular polygons and their geometric properties.						
Exterior	Interior	Total															
2x	3x	180 ⁰															
b)		Number of triangles n – 2, n = 5 5 – 2 = 3 triangles.	M ₁ A ₁	For substitution For 8 triangles													
26a)	P.7	$L \times W \times H = V$ $80\text{cm} \times 60\text{cm} \times h = (240 \times 1000) \text{ cm}^3$ $\frac{4800\text{cm}^2 \times h}{4800\text{cm}^2} = \frac{240000 \text{ cm}^3}{4800\text{cm}^2}$ $h = \left(\frac{2400}{48} \right) \text{cm}$ $h = 50\text{cm}$	M ₁ A ₁	For correct method. For h = 50cm	Review volume and capacity.												
b)		$V = L \times W \times H; h = 70\text{cm}$ $V = 80\text{cm} \times 60\text{cm} \times 70\text{cm}$ $V = (4800 \times 70) \text{ cm}^3$ $V = 336000\text{cm}^3$ $C = \left(\frac{V}{1000} \right) \text{ litres}$ $C = \left(\frac{336000}{1000} \right) \text{ litres}$ $C = 336 \text{ litres}$	M ₁ A ₁ B ₁	For method For 336000cm ³ For 336 litres.	Encourage candidates to comprehend the questions properly.												

27a)	P.7	<div><p><u>Sketch diagram</u></p></div> <div><p><u>Accurate diagram</u></p></div>	S ₁	For sketch	Review construction of quadrilaterals, triangles and polygons.									
			C ₁	For 60°										
			C ₁	For 120°										
			L ₁	For 7cm										
			J ₁	For joining										
b)		Ac = 12 cm	B ₁	For 12cm ± 0.1 cm	Emphasize neatness and accuracy.									
28a)	P.7	<div>$4(m-1)-2(m+3) = 0$$4m-4-2m-6 = 0$$4m-2m-4-6 = 0$$2m-10 = 0$$2m-10+10 = 0+10$$\cancel{2}m = \cancel{10}^5$$\cancel{2} \quad \cancel{2}^1$$m = 5$</div>	M ₁ M ₁ A ₁	For removing brackets. For collecting terms For m = 5	Review linear equations and fine more practice questions.									
b)		<table border="1"><thead><tr><th>Names</th><th>Kasozi</th><th>Magezi</th></tr></thead><tbody><tr><td>Now</td><td>58</td><td>14</td></tr><tr><td>X years</td><td>58+x</td><td>14+x</td></tr></tbody></table> <div>$3(\text{magezi}) = \text{Kasozi}$$3(14 + x) = 58 + x$$42 + 3x = 58 + x$$3x - x = 58-42$$\cancel{2}x = \cancel{16}^8$$\cancel{2} \quad \cancel{2}^1$$X = 8$<p>In 8 years time</p></div>	Names	Kasozi	Magezi	Now	58	14	X years	58+x	14+x	M ₁ M ₁ A ₁	For correct equation. For correct method. For 8 years.	Encourage candidates to interpret the questions properly.
Names	Kasozi	Magezi												
Now	58	14												
X years	58+x	14+x												

29a)	P.7	<u>Loaf of bread</u> $0.25 = \frac{25}{100} = \frac{1}{4}$ Remainder $\frac{4}{4} - \frac{1}{4} = \frac{3}{4}$ <u>Sugar and tea leaves</u> $\frac{1}{2}$ of $\frac{3}{4}$ $\frac{1}{2} \times \frac{3}{4} = \frac{3}{8}$ <u>Total fraction spent</u> $\frac{1}{4} + \frac{3}{8}$ $\frac{1 \times 2}{4 \times 2} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$ Fraction saved $\frac{8}{8} - \frac{5}{8} = \frac{3}{8}$	B ₁	For $\frac{3}{4}$	Review sharing in fractions and their application.								
b)		<u>Total money</u> Sh.3600 ÷ 3/8 Sh. (3600 x $\frac{8}{3}$) Sh. (1200x8) <u>Sh.9,600</u> <u>Loaf of bread</u> $\frac{1}{4} \times \text{sh.9,600}$ Sh.2400	M ₁	For method.	Revisit parts of a fraction.								
			A ₁	For sh.9,600									
			B ₁	For sh.2,400	Accept other correct alternatives.								
30a)	P.6	<table border="1"><tr><td>m</td><td>m+2</td><td>mt4</td><td>M+6</td></tr><tr><td></td><td></td><td></td><td></td></tr></table> $\frac{(m+2+m+4)}{2} = 13$ $2 \times \frac{(2m+6)}{2} = \frac{13 \times 2}{1}$ $2m+6 = 26$ $2m+6-6 = 26-6$ $\frac{2m}{2} = \frac{20}{2}$ $m = 10$ $m = 10, m+2 = 10+2 = 12$ $m+4 = 10+4 = 14$ $m+6 = 10+6 = 16$ The numbers are 10, 12, 14, 16	m	m+2	mt4	M+6					M ₁	For correct method.	Review patterns and sequences and their formation.
m	m+2	mt4	M+6										
			A ₁	For m = 10									
			B ₁	For 10, 12, 14, 16									
b)		Sum 10 +16 <u>26</u>	M ₁	For adding									
			A ₁	For 26									

31a)	P.6	$S = 80\text{km/h}$ $R = \frac{1}{2}\text{h}$ $T = 3\text{h}$ $D_1 = S \times T$ $= 80\text{km} \times 3\text{h}$ 1h $D_1 = (80 \times 3) \text{ km}$ $D_1 = 240\text{km}$	M_1 A_1	For correct method. For 240 km	Review Distance, Speed and Time.												
b)		Time = $\frac{D}{S}$ $T = \left(\frac{100}{40}\right)\text{hours}$ $T = 2\frac{1}{2}\text{hours}$ AVS = $\frac{\text{Total distance}}{\text{Total time}}$ AVS = $\frac{(240 + 100) \text{ km}}{3 + \frac{1}{2} + 2\frac{1}{2}\text{hours}}$ AVS = $\left(\frac{340}{6\frac{1}{2}}\right)^{56 \text{ rem } 4} \text{ km/h}$ AVs = $56\frac{42}{63}$ AVS = $56\frac{2}{3} \text{ km /h}$	B_1 M_1 A_1	For $T = 2\frac{1}{2}\text{hours}$ For correct method For $56\frac{2}{3} \text{ km/h}$													
32.	P.7	<table border="1"> <tr> <td>X</td><td>0</td><td><u>1</u></td><td>-2</td><td><u>-3</u></td><td>3</td></tr> <tr> <td>Y</td><td><u>3</u></td><td>5</td><td><u>-1</u></td><td>-3</td><td>9</td></tr> </table> $Y = 2x + 3$ If $x = 0$ $Y = 2(0) + 3$ <u>$Y = 3$</u> $Y = 2x + 3$ If $y = 5$ $5 = 2x + 3$ $5 - 3 = 2x$ <u>$2 = 2x$</u> $2 \quad 2$ $1 = x$ <u>$-x = 1$</u> $Y = 2x + 3$ If $x = -2$ $Y = (-2 \times 2) + 3$ $Y = -4 + 3$ <u>$Y = -1$</u>	X	0	<u>1</u>	-2	<u>-3</u>	3	Y	<u>3</u>	5	<u>-1</u>	-3	9	B_1 B_1 B_1 B_1 B_1	For 3 For 1 For -1 For -3 For 9	Revisit completion of co-ordinate tables and graphs. Encourage candidates to show clear working and fill the answers in the table.
X	0	<u>1</u>	-2	<u>-3</u>	3												
Y	<u>3</u>	5	<u>-1</u>	-3	9												