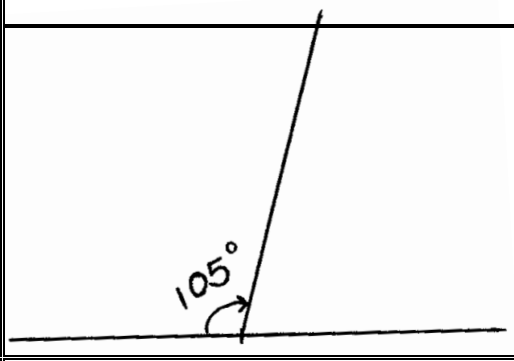
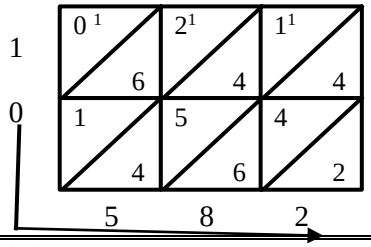
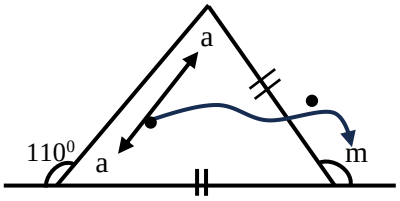
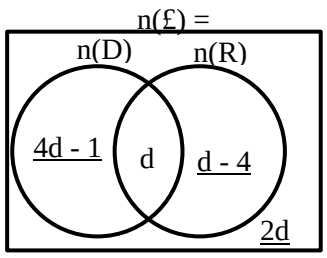
THE SIPRO PRE-PLE SET V MATHEMATICS MARKING GUIDE - 2024

NO	LEVEL	SOLUTION	AWARD	REASON	COMMENT
1.	P.1	1 1 +2 0 3 1	B_2	Award on sight of 31	Revisit operations on numbers.
2.	P.5	$\frac{1}{3} - \frac{1}{12}$ $\frac{1}{3} \times \frac{4}{4} - \frac{1}{12}$ $\frac{4}{12} - \frac{1}{12} = \frac{(4-1)}{12} = \frac{\cancel{3}}{\cancel{12}} = \frac{1}{4}$	M_1 A_1	For the method. For the correct answer.	Give more practice on questions involving fractions.
3.	P.6	Thousands: 320; units: 019 Three hundred twenty thousand, nineteen.	B_2	For the correct answer.	Train place values and spellings.
4.	P.7	X=7,y=5 $\sqrt{(3 \times x) + (3 \times y)}$ $\sqrt{(3x7) + (3x5)}$ $\sqrt{(21) + (15)}$ $\sqrt{36}$ 6 2 | 36; 2 | 18; 3 | 9; 3 | 3; 1 2 x 3 = 6	M_1 A_1	For correct substitution. For 6	Review the application of squares and square roots.
5	P.6	R∩S= {4,5} n(R∩S)=2	B_1 B_1	For listing For 2	Encourage candidates to identify members in the set.
6.	P.7	0.0495×10=0.495 0.495×10 =4.95 0.0495 =4.95×10^{-2}	M_1 A_1	For correct method. For correct answer.	Review scientific notations and power forms.
7.	P.7		B_2	For correct drawing of angle 105^0	Emphasise neatness accuracy and correct labelling of the angle.
8.	P.6	4, 12, 36, 108, 324 x3 x3 x3 x3 1 0 8 x 3 3 2 4	B_1 B_1	For pattern For 324	Revisit more patterns and sequences.

9.	P.7	K H D m d c m 1 Decameter = 10 metres 7. 83 decameters=(7.83×10)m $\left(\frac{783 \times 10}{100}\right)$m $= \left(\frac{780}{10}\right)$ = 78.3 meters	M_1 A_1	For correct method. For correct answer.	Encourage candidates to identify the metric conversions. Emphasize units.
10.	P.6	1 US dollar costs Ug.sh.3700 US dollar 286 costs Ug.sh.(3700×286) (28b×3700).Ug.shs. Ugsh. 1,058,200  	M_1 A_1	For multiplying For correct answer.	Revisit exchange rates and their application.
11.	P.6	-11-(-6) -11+6 -5	M_1 A_1	For addition For -5	Emphasize usage of brackets for sign changes.
12.	P.7	**Remaining fraction** $\frac{7}{7} - \frac{2}{7} = \frac{5}{7}$ Total pages $35 \div \frac{5}{7}$ $\left(35 \times \frac{5}{7}\right)$ page 49 pages Pages read $\frac{2}{7} \times 49$ (2×7) =14 pages	B_1 B_1	For $\frac{5}{7}$ For 14 pages	Encourage candidates to comprehend the questions properly.
13.	P.7	 $a=180^0-110^0=70^0$ m=a+a $m=70^0+70^0$ $m=140^0$	M_1 A_1	For method. For correct answer.	Encourage students to complete diagrams

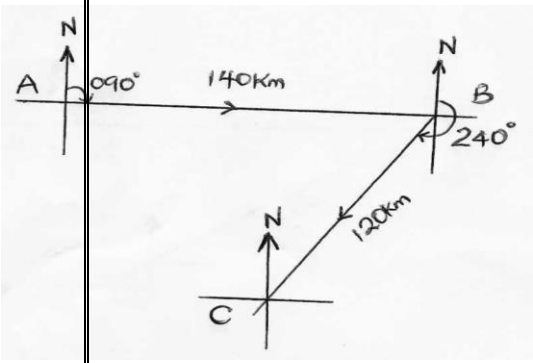
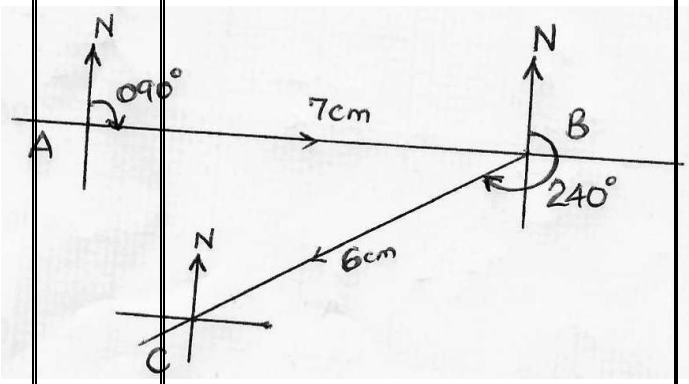
14.	P.5	2 hours 15 minutes 7 : 15 p.m -2 : 15 5 : 00 p.m The party started at 5: 00 p.m	M_1 A_1	For subtraction For 5:00 p.m.	Emphasize the units.
15.	P.6	Space =10 -1= 9 spaces Spaces from the 2^{nd} - 10^{th} tree 9 - 1 = 8 spaces Distance= (8×100) meters 800 meters	B_1 B_1	For 8 spaces For 800	Review application of poles in a straight line and the use of perimeter.
16.	P.7	$b=2a$ $b=2\times a$ $\frac{2}{2}=\frac{2}{2}a$ $a=1$ $a=1, b=2, c=4$ b^a+ac $b^a+(a\times c)$ $2^1+(1\times 4)$ $2+4=6$	B_1 B_1	For $a=1$ For 6	Revisit substitution involving powers.
17.	P.6	<table><tr><td>Mark</td><td>frequency</td></tr><tr><td>7</td><td>1</td></tr><tr><td>8</td><td>1</td></tr><tr><td>4</td><td>1</td></tr><tr><td>5</td><td>(4)</td></tr><tr><td>3</td><td>3</td></tr></table> Modal frequency = 4 times	M_1 A_1	For the method. For 4 times	Review data handling involving tabulated data.
18.	P.6	<table><tr><td>2</td><td>20</td><td>30</td></tr><tr><td>5</td><td>10</td><td>30</td></tr><tr><td></td><td>2</td><td>3</td></tr></table> HCF=2×5=10	M_1 A_1	For prime factorization. For 10	Revisit application of GCF and LCM. Accept other approaches.
19.	P.5	Pictures $\left(\frac{35}{7}\right)$ = 5 pictures 	B_1 B_1	For 5 pictures For 5 drawings	Encourage students to show clear working.
20.	P.6	$S=\frac{D}{T}$ $S=\left(\frac{400}{49}\right)$m/s S=10m/s 1km=1000m ? =10km 1hour =3600s ? =1s $\left(\frac{10}{1000}\right)$km $\left(\frac{10}{3600}\right)$ hours	B_1	For 10m/s	Revisit time, speed and distance in different units.

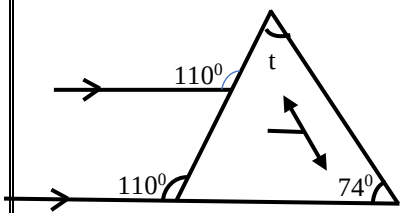
		$\left(\frac{10}{1000} \div \frac{1}{3600}\right)$ km/h $\left(\frac{\cancel{10}}{\cancel{1000}} \times \frac{\cancel{3600}}{1}\right)$ km/h 36km/h	B_1	For 36km/h	
21a).	P.6	1kg costs sh.4150 25kg cost sh.(4150×25) 4 1 5 0 × 2 5 2 0 7 5 0 +8 3 0 0 sh. 103,750 1 0 3, 7 5 0 Ochola paid sh. 103750	M_1 A_1	For method For correct answer	Encourage candidates to show the working. Emphasize correct units (sh.)
b)		Sh. 4,150 buys 1kg of beans Sh. 4,025,500 buys $\left(\frac{4,025,500}{4150}\right)$ kg 970kg	M_1 A_1	For dividing For 970 kg	Revisit operations.
c)		**Buying price of millet flour** Sh.(2500×70) Sh.175000 **Selling price of millet flour** Sh.(3000×70) Sh. 210,000 Profit= Sp - Bp Sh. 210,000 Sh. 175,000 Sh. 35,000	M_1 A_1	For subtracting For sh. 35,000	Review buying and selling. Accept (sh.500×70) sh.35,000
22 a)	P.7		B_1 B_1 B_1	For each correct entry.	Encourage candidates to interpret the set notations properly.
b)		4d-1-(d+4)=19 4d-1-d-4= 19 4d-d-1-4=19 3d-5 =19 3d-5+5= 19+5 $\frac{\cancel{3}d}{\cancel{3}_1} = \frac{\cancel{24}^8}{\cancel{3}_1}$ d = 8	M_1 A_1	For correct equation. For 8	Emphasize the use of brackets. Encourage candidates to comprehend questions properly.

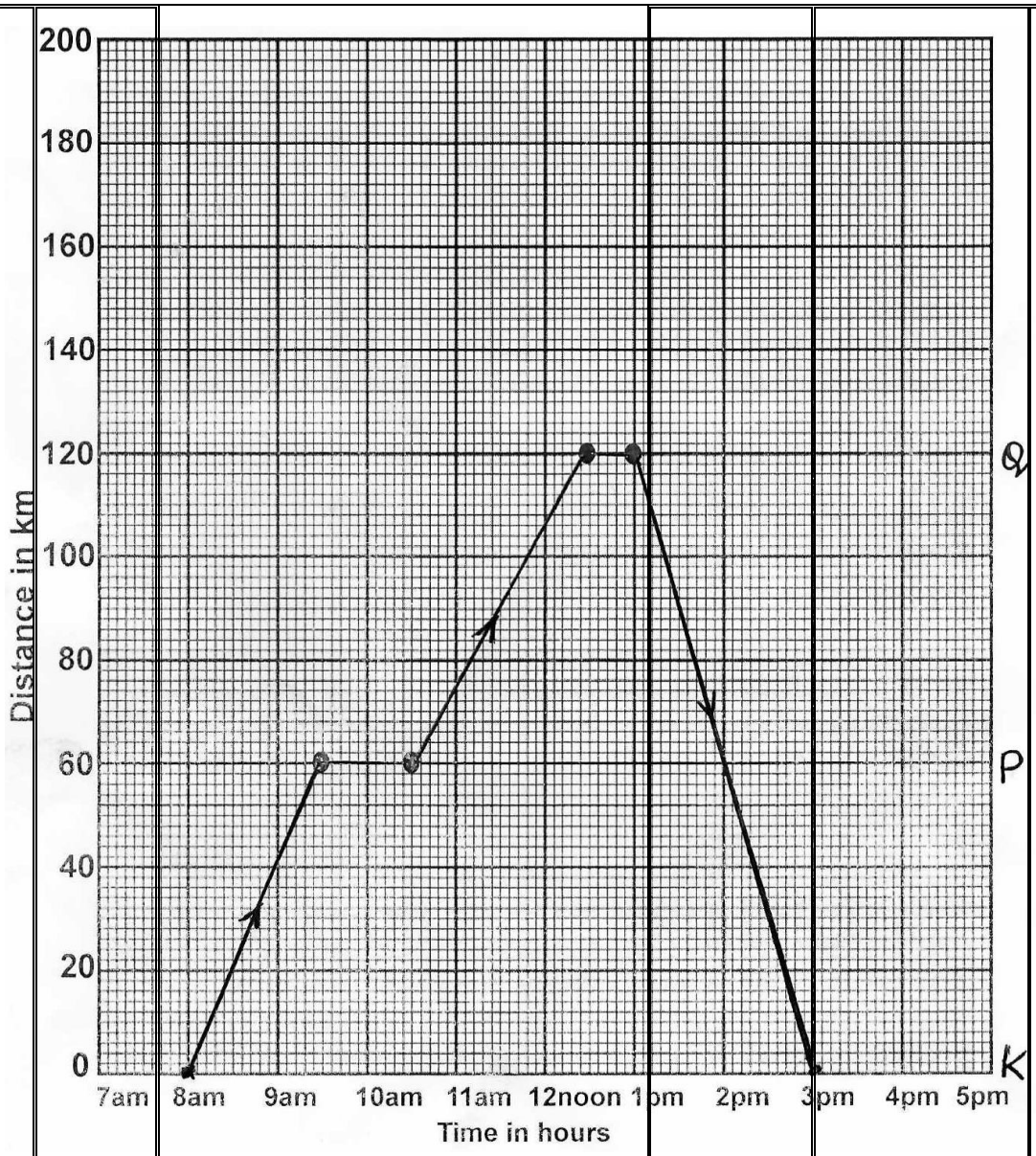
c)		n(s)=4d-1+d d+4+2d 8d+3 (8×8)+3 64+3=67 n(s)=67 n(E)=2d=2×8=16 P = n(E) = 16 n(S) 67	 B_1	 For 16 17	Review other statistical data involving probability.
23a)	P.7	<table><tr><th>Length</th><th>Width</th><th>Perimeter</th></tr><tr><td>5x</td><td>4x</td><td>90cm</td></tr></table> 2(L+W)= 90cm 2(5x+4x)=90cm 2(9x) = 90cm 2×9x =90 cm ~~18~~x = ~~90~~^{5} ~~18~~ ~~18~~$_1$ x = 5cm L=5x=(5x5)cm=25cm W=4x=(4x5)cm= 20cm	M_1 A_1 A_1	For the correct method For 25 cm For 20 cm	Revisit length, mass and capacity and application questions in real life situations.
b)		A=LXW =25cmx20cm =500cm^2	M_1 A_1	For substitution For 500cm^2	Emphasize correct units
24a)	P.7	4(2y+3)-3(y-1)=30 8y+12-3y+3=30 8y-3y+12 +3=30 5y+15=30 5y+15-15+30-15 ~~5~~y = ~~15~~^{3} ~~5~~ ~~5~~ Y=3	B_1 M_1 A_1	For removing brackets. For dividing For y=3	Review other questions and give questions to practice.
b)		2k -1≤3 3 2k –1+1≤3+1 3 ~~3~~x2k ≤ 4x3 ~~3~~ 1 ~~2~~k ≤ ~~12~~^{6} ~~2~~ ~~2~~ K ≤ 6 K={6,5,4,3…}	B_1 B_1	For k≤6 For correct answer	Give more practice on solving inequalities and finding solution sets.
25a)	P.7	Let y = 0.2727…(i) 100y = 0.2727x100 100y =27.27…….(ii) Equation (ii) - equation(i) 100y = 27.2727---------- y = 0.2727---------- 99y = 27	M_1	For correct method	Revisit recurring decimal. **Accept:** n-0 n-1 27-0 100-1 27 99

		$\frac{99}{99}y = \frac{27}{99} \div 9$ $99 \div 9$ $Y=\frac{3}{11}$	A_1	For $\frac{3}{11}$	$=\frac{3}{11}$
b)		$\frac{1.45 - 0.55}{0.28 + 0.08}$ $1.45 \quad 0.28$ $\underline{+0.28} \quad \underline{+0.08}$ $0.9\,0 \quad 0.36$ $0.9 \div 0.36$ $\frac{9}{10} \quad \frac{36}{100}$ $\frac{9}{10} \times \frac{100}{36} = \frac{10}{4} = 2\frac{2}{4}$ $2\frac{1}{\cancel{4}} = 2\frac{1}{2}$ $\frac{1}{2} = 0.5$ $\therefore 2\frac{1}{2.5}$	B_1 B_1 B_1	For adding For subtracting. For 2.5	Review operations on decimal fractions Reject. $2\frac{1}{2}$
26a)	P.6	11 :10 am. $\quad 10 + 60=70$ $\underline{- 10 :35 \text{ am.}} \quad 7\ 0$ 35mins. $\quad \underline{-3\ 5}$ $3\ 5$ The motorist stayed at C for 35 minutes.	B_1	For 35 minutes	Follow through.
b)		1: 00 p.m $\quad$ 9 : 40 am $\underline{+12\ 00 \text{ hours}} \quad \underline{+ 0000 \text{ hours}}$ $\underline{13\ \ 00 \text{ hours}} \quad \underline{09\ 40 \text{ hours}}$ 09 40 hours $1^{2}\cancel{3}\ {}^{6}00\text{hours} \quad 13\ 00 \text{ hours}$ $\underline{- 09\ 40 \text{ hours}} \quad \underline{-09\ 40 \text{ hours}}$ $\underline{3\ \ :20} \quad \underline{3\ 20}$ 3hours 20 minutes $\quad$ 3 hours 20 minutes	M_1 A_1	For subtracting For 3 hours and 20 minutes $3\frac{1}{3}$ hours	Review travel time tables.
c)		Time taken 13 00 hours $\underline{-09\ 00 \text{ hours}}$ $4\ \ 00 \text{ hours}$ Time =4hours D =SXT D=60 $\frac{\text{Km}}{\cancel{\text{Hour}}}$x4 $\cancel{\text{hours}}$ D= (60x4)km D=240km	B_1 B_1	For time 4 hours For 240 km	Review the 12 and 24 hour clock system.

27	P.7	$\pi r^2=A$ $\frac{7}{7}X\frac{22}{}r^2=616x7$ $\frac{22}{22}r^2 = \frac{616x7}{22}$ $r^2 = \left(\frac{^{28}56x7}{2}\right)$ $r^2 = 28x7$ $\sqrt{r^2}=\sqrt{196}$ r=14cm Diameter D=14cm+14cm=28cm circular designs $\left(\frac{56cmx56cm}{28cm\ \ 28cm}\right)$ $\left(\frac{56^2x56^2}{28\ \ 28}\right) = 2 \times 2$ = 4 circular designs	M_1 A_1 M_1 A_1	For method. For 14cm For method For circular design.	Review application of packing and comparison of volume and area.
28a)	P.6	<table><tr><td>1st</td><td>2nd</td><td>3rd</td><td>4th</td><td>sum</td></tr><tr><td>y-6</td><td>y-4</td><td>y-2</td><td>y</td><td>108</td></tr></table> y-6+y-4+y-2+y=108 4y-12 =108 4y-12+12 =108+12 $\frac{4y}{4} = \frac{120^{30}}{4_1}$ Y = 30 <table><tr><td>1st</td><td>2nd</td><td>3rd</td><td>4th</td></tr><tr><td>y-6 30-6</td><td>y-4 30-4</td><td>y-2 30-2</td><td>Y 30</td></tr><tr><td>24</td><td>26</td><td>28</td><td>30</td></tr></table> ∴ 24, 26, 28, 30	M_1 M_1 A_1 B_1	For equation For method For correct answer For the numbers	Review application of consecutive numbers.
b)		R=H-L R=30-24 R=6	B_1	For 6	

29 a)	P.7	Distance =S x T = 60Km x 2h 1h D =120Km   Actual distance: A to B 140km; B to C 120km Drawing length: 140 ÷ 20 = 7cm; 120 ÷ 20 = 6cm	S_1 C_1 C_1 L_1	For correct sketch. For 7cm For 240^0 For 6cm	Give more practice questions on bearing. Emphasize accuracy and neatness.
30a)	P.7	Ritah : Julianah : Safina 3 :4 :8 (Ritah + Juliana)=3+4=7parts less parts 8-7=1 part 1 part represent sh. 250,000 4 parts represents sh. 250,000 x 4 Juliana contributed Sh. 1,000,000	B_1 B_1 M_1 A_1	For 7 parts For 1 part For method For sh.1,000,000	Review ratios and their applications.
b)		Total parts= 3+4+8=15 1 part represents sh. 250,000 15 parts represent sh. 250,000x15 2 5 sh. 3,750,000 x1 5 1 2 5 2 5 3 7 5 Ritah's contribution 3 x sh.250,000 sh. 750,000 750,000 x100% 3,750,000 ^{1} ^{3} 75x^{20}100% 375 15 5 1 20%	M_1 A_1	For method For correct answer	Accept ^{1} 3 x100 ^{20}% 15 5 1 20%

31a)	P.7	 T $+74^0=110^0$ 110^0 t $+74^0-74^0=110^0-74^0$ -74^0 t $=36^0$ 36^0	M_1 A_1	For correct method For correct answer	Review angle properties in parallel lines and triangles.
b)		**Exterior angle** $\frac{360^0}{8} = 45^0$ Interior angle $=180^0 - 45^0$ 135^0 $5x+30^0 =135^0$ $5x+30^0 - 30^0=135^0 - 30^0$ $\frac{5x}{5}=\frac{105^0}{5_1}$ X = 21^0	B_1 M_1 A_1	For 135^0 For method For correct answer	Give more practical questions on angle properties in on regular polygon. Accept other correct approaches.
32a)	P.7	D_1=SXT $D_1=40\frac{km}{1h} \times 1\frac{1}{2h}$ $D_1=\left(\frac{^{20}40 \times 3km}{2_1}\right)$ D_1=60km R_1=1 hour $T_2=\left(\frac{120}{60}\right)$ hours T_2 = 2hours $R_2 = \frac{1}{2}$ hours T_3 = 2hours	B_1 B_1 B_1 B_1	For 60km For 2 hours For graph For graph	Expose candidates to a variety of related questions

				
b)		Kato reached town at 3p.m.	B_1	For 3 p.m.