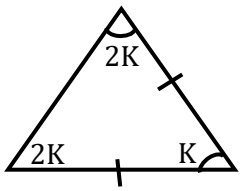
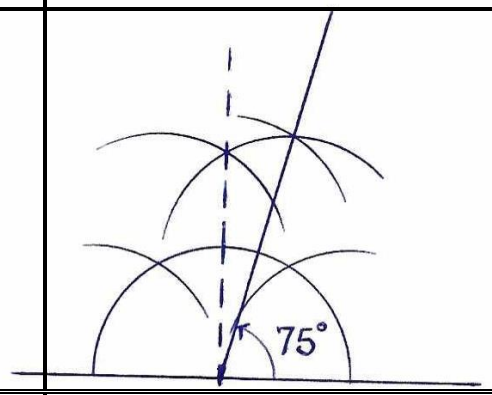
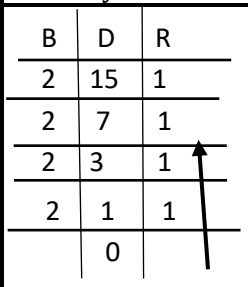
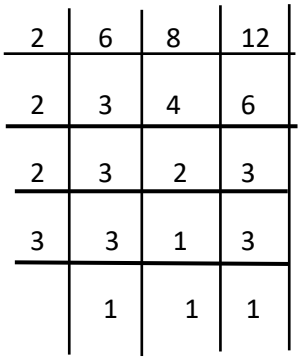
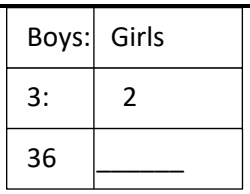
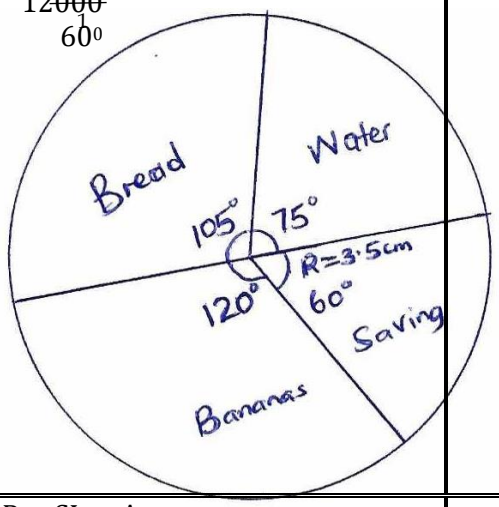
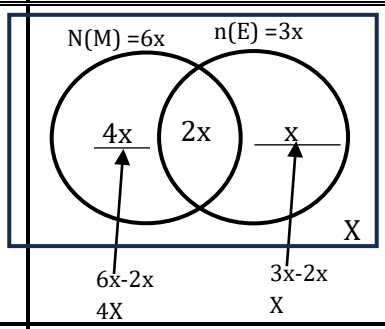
THE SIPRO PRE-PLE SET IV MATHEMATICS MARKING GUIDE - 2024

NO	LEVEL	SOLUTION	AWARD	REASON	COMMENT
1.	P.2	$\frac{10}{\cancel{50}} = 10$ $\cancel{5_1}$	B_2	Award on sight.	Revisit operation on whole numbers.
2.	P.6	Seven hundred thirty-four. 734 700 + 30 + 4 ↓ ↓ ↓ DCC XXX IV 734 = DCCXXXIV	B_1 B_1	For 734 For DCCXXXIV	Encourage candidates to expand the numerals.
3.	P.6	3k + 7r - 4k + 5n 3k – 4 k + 7r + 5n -k + 7r + 5n 7r + 5n - k	M_1 A_1	For collecting like terms. For correct answer.	Give candidates more practice questions.
4.	P.5	Nine hundred nine thousand nine hundred nine.	B_2	For correct answer.	Train more on spellings.
5.	P.7	 $2k + 2k + k = 180^0$ $\frac{\cancel{5k}}{\cancel{5}_1} = \frac{\cancel{180}^{36}}{\cancel{5}_1}$ $K = 36^0$	M_1 A_1	For correct equation. For correct answer.	Encourage candidates to complete diagrams.
6.	P.7	$1\ 1\ 1_{two}$ x $1\ 0_{two}$ 0 0 0 +111 $1\ 1\ 1\ 0_{two}$	M_1 A_1	For method For correct answer.	Review bases.
7.	P.6	Sample spaces = {1, 2, 3, 4, 5, 6} n(S) = 6 Events £ = {1, 3, 5} P = n(E) n(S.S) P = 3 6	B_1 B_1	For identifying odd number For 3 6	Encourage candidates to show the necessary working.
8.	P.7	12:20 a.m ➞ 0020 hours	B_2	For correct answer.	Review the 24hour and 12 hour clock systems.
9.	P.7		B_2	For the correct angle.	Make a review on drawing and constructing of angles.
10.	P.4	1L = 1000mL 4.5l = $\left(\frac{45}{10} \times 1000\right)$ ml 4500ml	M_1 A_1	For multiplying For 4500ml	Revisit conversion of other metric units.

11.	P.5	1m = 100cm ? = 800cm $\left(\frac{800}{100}\right)$ 8m 1stride represents 1 metre 8 metres represent 8 strides The boy makes 8 strides.	M_1 A_1	For method For 8 strides	Encourage candidates to read and comprehend the questions properly.
12.	P.7	 $15_{ten} = 1111_{two}$	M_1 A_1	For correct method For correct answer.	Review decimal and non-decimal bases.
13.	P.5	 LCM = 2 x 2 x 2 x 3 8 x 3 Number = LCM + Remainder (24 + 5) 29	B_1 B_1	For LCM 24 For 29	Review application of both LCM and GCF.
14.	P.5	12 books cost sh. 144,000 1 book costs sh. $\left(\frac{14400}{12}\right)$ 1 book costs sh. 1,200 6 books cost sh. 1,200 x 6 sh.7,200	M_1 A_1	For the method. For correct answer.	Expose candidates to dozens, $\frac{1}{2}$ dozens, etc.
15.	P.6	 3parts represent 36 pupils 1part represents $\left(\frac{36}{3}\right)$ pupils 1 part represent 12 pupils 2 parts represent (12 x 2) girls 24 girls	M_1 A_1	For method For correct answer	Revisit ratios and their applications.
16.	P.6	3 9 10 ~~4.00~~ -0. 4 8 3. 5 2	B_2	Award on sight	Encourage candidates to practice more on decimal fractions.

17.	P.6	$m + 2 < 6$ $m + 2 - 2 < 6 - 2$ $m < 4$ $m = \{3,2,1,0---\}$	M_1 A_1	For method For correct answer	Review more on inequalities.
18.	P.7	3 men take 20 days 1 man can dig in (3x20) days 1 man takes 60 days 60 days are taken by 1man 12 days are taken by $\frac{60}{12}$ men 12days are taken by 5 men.	M_1 A_1	For correct method For 5	Revisit proportions
19.	P.5	Profit = sh. 5,000 Sp = sh. 20, 000 CP = sh. 20,000 -sh. 5,000 sh. 15,000	M_1 A_1	For method For sh.15,000	Revisit money and its applications.
20.	P.7	$2^n - 1 = 7$ $2^n - 1 + 1 = 7 + 1$ $2^n = 8$ $2^n = 2^3$ $n = 3$ Juma used 3 elements. 2 | 8 2 | 4 2 | 2 1	M_1 A_1	For correct method For correct answer	Encourage candidates to practice related questions.
		SECTION B			
21.	P.6 a)	New temperature original + Increased temp $-4^0c + (+9^0c)$ $-4^0c + 9^0c$ $+5^0c$	M_1 A_1	For method For $+5^0c$	Review integers and its application in real life situations.
	b)	<table><tr><td>sun</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thur</td><td>Fri</td><td>Sat</td></tr><tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>7</td><td>8</td><td>9</td><td>(10)</td><td></td><td></td><td></td></tr></table> The conference ended on Wednesday.	B_2 B_1	For representing on calendar. For Wednesday	Encourage candidates to make more practice on related concepts.
22.	P.6	**Water** **Total** Sh. $\frac{2500 \times 360}{}$ sh. 2,500 Sh. 12000 sh. 3,500 75^0 sh. 4,000 +sh. 2,000 sh.12,000 **Bread** sh. $\frac{3500}{} \times \frac{360^0}{}$ sh. 12000 105^0 **Bananas** sh. $\frac{4000}{} \times \frac{360^0}{}$ 12000 120^0	B_1 B_1 B_1 B_1 B_1	For total For 75^0 For 105^0 For 120^0 For 60^0	Emphasise neatness and accuracy when drawing.

		Saving sh.$\frac{2000}{1}$ x $\frac{30}{360^0}$ $12\frac{000}{1}$ 60^0  	B_1	For radius	
23.	P.7	P + SI = A P + (P x R x T) = A P + $\left(\frac{10}{100} \times \frac{2}{1}\right)$ = sh.120,000 5 5 x $\frac{p}{1}$ + $\left(\frac{p}{5} \times 5\right)$ = sh.$\frac{120,000}{1}$ x 5 5p + p = sh'120,000 x 5 $\frac{6p}{6}$ = sh.$\frac{120000}{6_1}$ x 5 P = sh.100,000 ∴ Fatuma deposited sh.100,000	M_1 M_1 M_1 A_1	For method For simplifying For dividing For the correct answer.	Review banking system.
24.	P.7 a)	L = $\frac{1}{4}$ (2πr) $\frac{1}{4_1} \times \frac{2}{2_1} \times \frac{22}{7_1} \times \frac{7}{1}$cm 11cm	B_1 M_1 A_1	For substitution For correct method For 11cm	Review parts of a circle.
	b)	P = C + 25cm + 7cm + (25-7)cm P= 11cm + 25cm + 7cm+ 18cm P = (36 + 25)cm P = 61cm	B_1 M_1 A_1	For 18 For adding For 61cm	Encourage candidates to study and complete diagrams.
25	P.5 a)	2(k+6) = (k + 32) 2(k+6) = K + 32 2k + 12 = k + 32 2k – k = 32 – 12 K = 20	M_1 A_1	For method For 20	Review angle properties in triangles.
	b)	$<$NMT $2(K+6)^0+(K+32)^0+<NMT=180^0$ $2(20+6)^0+(20+32)^0+<NMT=180^0$ $2(26)^0+52^0+<NMT=180^0$ $2(26)^0+52^0+<NMT=180^0$ $52^0+52^0+<NMT=180^0$ <NMT $+104^0=180^0$ <NMT $+104^0-104^0=180^0-104^0$ <NMT $=76^0$	M_1 M_1 A_1	For method For simplifying For 76^0	Encourage candidates to identify units.

26.	P.6 a)	<table><tr><td>1st</td><td>2nd</td><td>3rd</td><td>sum</td></tr><tr><td>y</td><td>Y + 2</td><td>y +6</td><td>17</td></tr></table> y + y + 2 + y + 6 = 17 3y + 6 + 2 = 17 3y + 8 = 17 3y + 8 – 8 = 17 – 8 3y = 9 $\frac{3y}{3} = \frac{9}{3}$ Y = 3 ∴ The mass of the smallest piece of 3kg.	B_1 M_1 A_1	For equation formation For collecting like terms. For 3kg.	Review application of algebra.
	b)	4n<16 $\frac{4n}{4} < \frac{16}{4}$ n < 4	M_1 A_1	For dividing For correct answer	Give practical questions on inequalities.
27.	P.7 a)		B_1 B_1 B_1	For 4x For x For x	Encourage candidates to read and interpret questions properly.
	b)	n(M) -n(E) only =25 6x – x =25 5x = 25 $\frac{5x}{5} = \frac{25}{5}$ X = 5	M_1 A_1	For correct equation For X = 5	
28.	P.6	L x W x H = Volume 17cm x n x 6cm = 918cm³ $\frac{102cm^2 \times n}{102cm^2} = \frac{918cm^3}{102cm^2}$ n = $\left(\frac{918}{102}\right)$ cm n = 9cm A = L x W = 17cm x 9cm A = 153m²	B_1 M_1 A_1 M_1 A_1	For substitution For dividing For n = 9 For substitution For 153cm²	Review length mass and capacity and application questions.
29.	P.7 a)	Distance D D = S x T D = $\frac{72km}{1h}$ x 5h D = 360km	M_1 A_1	For method For correct answer	
	b)	Time for Return T = $\frac{D}{S}$ T = $\left(\frac{360}{120}\right)$ hours T = 3hours AVS = $\frac{\text{Total Distance}}{}$	B_1 M_1	For T = 3 hours For correct method	Revisit Time speed and distance. Encourage the use of correct units.

		Total time AVS = (360 + 360) km (5 + 3) hours AVS = (720 / 8) km/h AVS = 90km/h	A_1	For 90km/h	
30.	P.7 a)	(17 x 5) -2(20 – 17) 85 - 2 (3) 85 – 6 = 79marks	M_1 A_1	For method For 79	Review integers and their application.
	b)	<table><tr><td></td><td>correct</td><td>Wrong</td><td>Total</td></tr><tr><td>Questions</td><td>y</td><td>20-y</td><td>20</td></tr><tr><td>Marks</td><td>5y</td><td>2(20-y)</td><td>51</td></tr></table>			
		5y – 2 (20 – y) = 51 5y – 40 + 2y = 51 5y + 2y – 40 = 51 7y - 40 = 51 7y - 40 + 40 = 51 + 40 7y = 91 7 7 Y = 13 13 correct answers	B_1 M_1 A_1	For equation For method For 13	
31.	P.6 a)	<table><tr><td>2</td><td>60</td><td>90</td></tr><tr><td>3</td><td>30</td><td>45</td></tr><tr><td>5</td><td>10</td><td>15</td></tr><tr><td></td><td>2</td><td>3</td></tr></table> 2 x 3 x 5 6 x 5 = 30 taxis	M_1 A_1	For method For 30	Review application of GCF/HCF
	b)	Groups 3 ~~90~~ ~~30~~ = 3 groups	M_1 A_1	For dividing. For 3 groups	
32.	a) P.7	Shoes 2 x sh. 30,000 = sh. 60,000 Stocking : sh.32,000 Blankets: sh. 90, 000 Total: sh. 90,000 sh. 32,000 +sh. 60, 000 sh.182,000 <table><tr><td>ITEM</td><td>QUANTITY</td><td>UNIT COST</td><td>AMOUNT</td></tr><tr><td>Shoe</td><td>2 pairs</td><td>sh.3,000 each pair</td><td>Sh.60,000</td></tr><tr><td>stocking</td><td>4 pairs</td><td>Sh.8,000each pair</td><td>Sh. 32,000</td></tr><tr><td>blankets</td><td>1 piece</td><td>Sh.8,000each pair</td><td>Sh.90,000</td></tr><tr><td>Total</td><td></td><td></td><td>Sh.182,000</td></tr></table>	B_1 B_1	For sh.60,000 For sh.182,000	Encourage candidates to put the correct units of measurement.
	b)	Total income Sh.50,000 x 10 = sh. 500, 000 sh. 182000 x 2 sh. 364,000 sh. 500,000 -sh. 364,000 Sh. 136,000	B_1 M_1 A_1	For sh. 500,000 Sh. 364,000 For sh. 136,000	