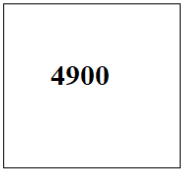


SECTION A (30 MARKS) ANSWER ALL QUESTIONS		Full mark								
Question 1 For each question, there are four alternatives A, B, C and D. Choose the correct alternative and circle it. Do not circle more than ONE alternative. If there is more than one choice circled, NO score will be awarded.		[30]								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">Criteria</th> <th style="width: 30%;">Marks</th> </tr> </thead> <tbody> <tr> <td>Circles the correct option</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Circles more than ONE alternative</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Circles none of the alternatives</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>		Criteria	Marks	Circles the correct option	2	Circles more than ONE alternative	0	Circles none of the alternatives	0	
Criteria	Marks									
Circles the correct option	2									
Circles more than ONE alternative	0									
Circles none of the alternatives	0									
i. What is the equivalent value for the expression $2 \times 10^{-6} + 3 \times 10^{-3} + 2 \times 10^2$? <input checked="" type="radio"/> A 200.003002 B 20.003002 C 2.020302 D 0.023002										
<i>Solution:</i> $0.000002 + 0.003 + 200 = 200.003002$										
ii. The average distance between Earth and Mars is about 1.52×10^8 km. It can also be expressed as A 15,200,000 km. <input checked="" type="radio"/> B 152,000,000 km. C 1,520,000,000 km. D 15,200,000,000 km.										
<i>Solution:</i> $1.52 \times 100,000,000 = 152,000,000$										
iii. A square field has an area of 4900 m^2 . What will be its perimeter? A 49 m B 70 m <input checked="" type="radio"/> C 280 m D 298 m										
<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;"><i>Solution</i></div> <div style="text-align: center;">  <p style="margin: 0;">70</p> <p style="margin: 0;">4900</p> </div> <div style="margin-left: 20px;"> <p style="margin: 0;">a= 70</p> <p style="margin: 0;">P= 4a</p> <p style="margin: 0;">P= 4 x 70= 280</p> </div> </div>										
iv. The average mileage of different cars and the distance travelled is given in the table below.										

Car	Mileage (km per litre of fuel)	Distance (km)
I	20	240
II	16	208
III	18	252
IV	22	275

Which statement below is true based on the information given in above table?

- A car I consumed more than car II
- B car II consumed minimum petrol
- C car III consumed maximum petrol
- D car IV consumed maximum petrol

Solution:

Car	Mileage	Distance (km)	Fuel consumption
I	20	240	$\frac{240}{20} = 12 \text{ l}$
II	16	208	$\frac{208}{16} = 13 \text{ l}$
III	18	252	$\frac{252}{18} = 14 \text{ l}$
IV	22	275	$\frac{275}{22} = 12.5 \text{ l}$

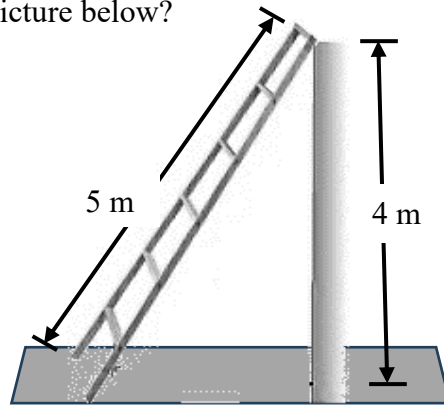
- v. A sales person is paid a monthly salary of Nu 12,000 with 5% commission on sales up to Nu 30,000 and 3% on the sales exceeding Nu 30,000. The sales person sets an earning target of Nu 19,500 for the next month. What must be the total sale amount to achieve this target?
- A Nu 9,600.
 - B Nu 37,500.
 - C Nu 200,000.
 - D Nu 230,000.

Sample solution:

salary
 0 5% 30,000 3% ?
 ↓ ↓ ↓
 12000 5% of 30000=1500 3% of x
 $12000+1500+0.03x=19500$
 $0.03x=6000$
 $x=200000$
 Therefore sale amount must be $200000+30000=230000$

vi. What is the slope of the ladder given in the picture below?

- A $\frac{4}{5}$
- B $\frac{4}{3}$**
- C 4
- D 5



Solution

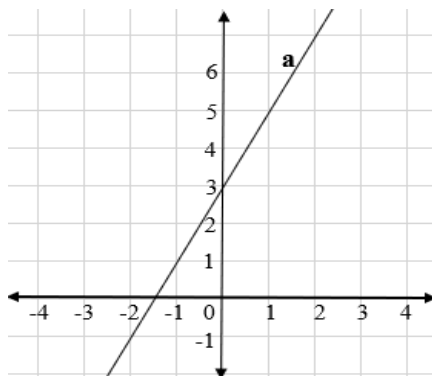
$$\text{slope} = \frac{\text{rise}}{\text{run}}$$

here rise = 4m but run is not shown

Using pythagoras theorem we get run = 3m

$$\text{Therefore slope} = \frac{4}{3}$$

vii. Which of the following equation represents line 'a' given in the graph?



- A $y = x + 3$
- B $y = 2x + 3$**
- C $y = 2x + 1.5$
- D $y = 2x - 1.5$

Sample Solution

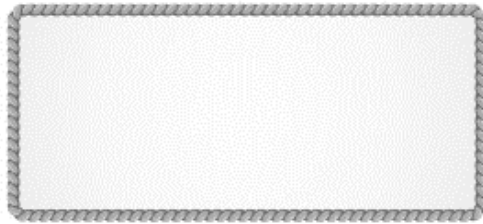
general equation of line is given by $y = mx + b$

here $b = 3$so only A and B are possible solution

taking any x value from x axis of graph and substituting (say $x = 1$) then $y = 2 \times 1 + 3$
 $y = 5$

Therefore $y = 2x + 3$ represents the line

viii. A 30 m long rope is used to form a rectangle such that its side lengths are in whole numbers.



Which of the following is the possible area covered by the rope?

A 15 m^2

B 30 m^2

C 44 m^2

D 60 m^2

Sample Solution:

$P = 30 \text{ cm}$ so possible whole number dimensions are (1,14), (2,13), (3,12), (4,11), (5,10), (6,9), (7,8)

Area is product of dimension. So possible Areas are

($1 \times 14 = 14$), ($2 \times 13 = 26$), ($3 \times 12 = 36$), ($4 \times 11 = 44$), ($5 \times 10 = 50$), ($6 \times 9 = 54$), ($7 \times 8 = 56$)

ix. The wheel cover of a car with an area of 154 cm^2 is damaged.



What should be the diameter of the cover so it exactly fits into the wheel?

- A 5.5 cm
- B 7.5 cm
- C 12.0 cm
- D 14.0 cm**

Solution

$$A = 154 \quad \pi r^2 = 154$$

using $\pi = \frac{22}{7}$, we get $r = 7$. And Diameter = 14 cm

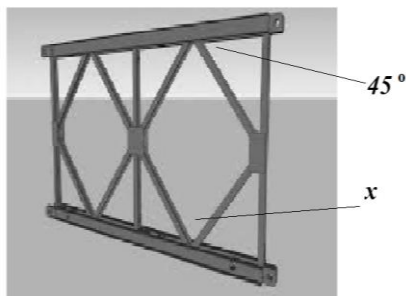
x. Which of the following set is the side lengths of a right-angled triangle?

- A 1, 2, 3
- B 3, 5, 9
- C 6, 9, 12
- D 9, 12, 15**

Solution:

The set that satisfy Pythagorean theorem is 9,12,and 15 (Pythagorean triple)
(i.e $9^2+12^2=15^2$)

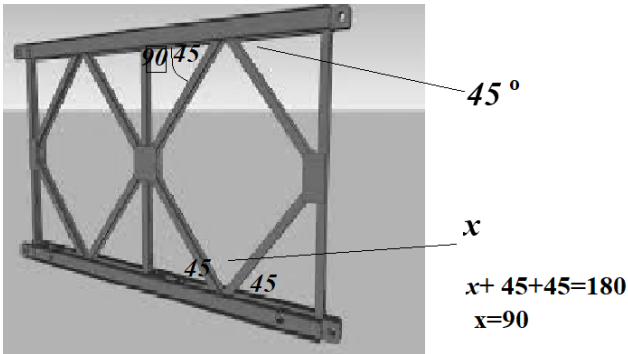
xi. Similar triangles and quadrilaterals are used to build the truss of a baily bridge.



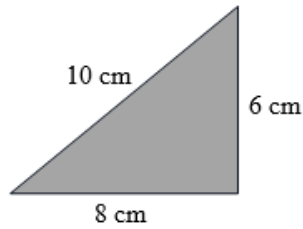
What could be the measure of angle x shown above on the truss?

- A 45°
- B 60°
- C 90°
- D 135°

Solution:



xii. The triangle shown below is dilated with a scale factor of 1.5. Which set represents the lengths of the sides of the dilated triangle?

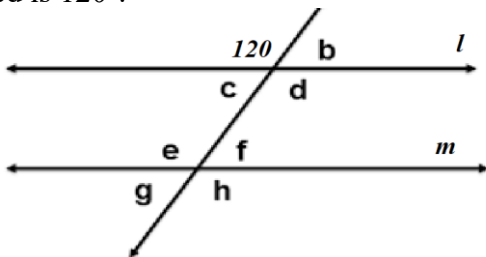


- A 6cm, 8cm, 10cm
- B 9 cm, 12 cm, 15 cm
- C 4 cm, 5.33 cm, 6.67 cm
- D 7.5 cm, 9.5 cm, 11.5 cm

Solution

$$1.5 \times [6 \ 8 \ 10] = [9 \ 12 \ 15].$$

xiii. Line ' l ' and ' m ' are parallel lines cut by a transversal and one of the angles formed is 120° .



Which of the following option is true about the other angles?

- A $\angle b = 120^\circ$

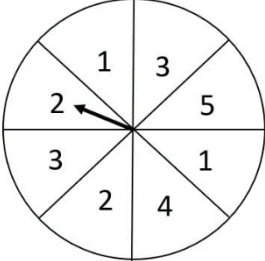


<p>B $\angle e = 60^\circ$</p> <p>C $\angle d + \angle f = 120^\circ$</p> <p>D $\angle b + \angle d = \angle d + \angle f$</p>	
--	--

Solution:

Recalling the angles formed we know

- angles on straight line is 180 $\rightarrow \angle b \neq 120^\circ \rightarrow$ choice A is Not true
- complementary angles are equal \rightarrow angle e must be $120^\circ \rightarrow$ choice B is Not true
- Interior angles are supplementary $\rightarrow \angle d + \angle f = 180^\circ \rightarrow$ Choice C is Not true
- $\angle b + \angle d = 180^\circ$ — — — **angle on staright line**
- $\angle d + \angle f = 180^\circ$ — — **interior angles are supplementary**

<p>xiv. The complementary probability of spinning 2 in the spinner below is</p> <p>A $\frac{2}{5}$</p> <p>B $\frac{2}{8}$</p> <p>C $\frac{4}{5}$</p> <p>D $\frac{6}{8}$</p>		E2-Probabil	Calculat
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Solution :

Total sectors = 8

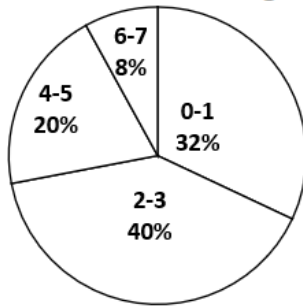
Total 2s = 2

Numbers wihc are Not 2s=6. Therefore $P(\text{Not } 2) = \frac{6}{8}$

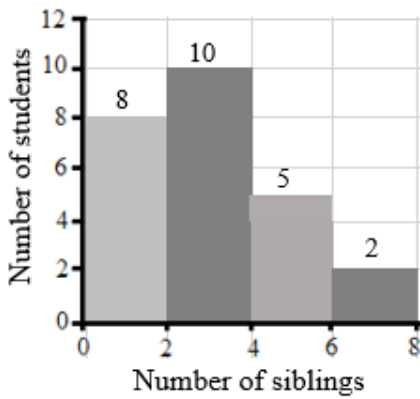
OR $P(2) = \frac{2}{8}$ so $P(\text{Not } 2) = 1 - \frac{2}{8} = \frac{6}{8}$

<p>xv. The circle graph below represents a survey conducted in a class.</p>	
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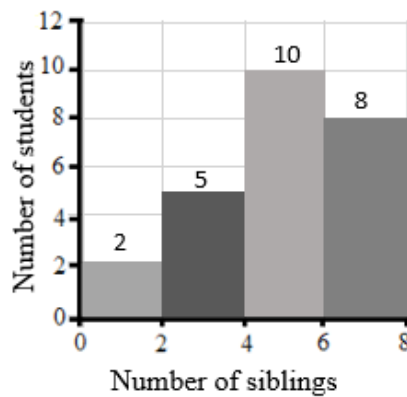
Number of Siblings



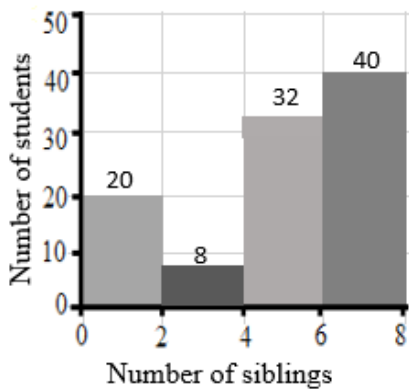
Which of the histogram below represents the same data as shown in the circle graph?



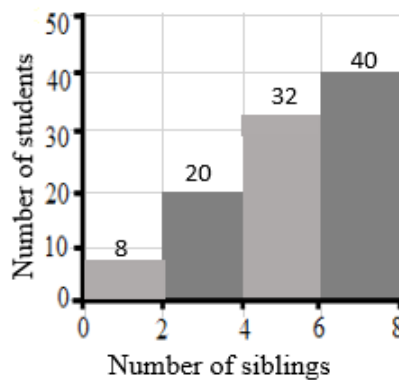
A



B



C



D

Solution

Question		A		B		C		D	
Sib- lings	per- cent	people	per- cent	people	per- cent	people	per- cent	people	per- cent
0-1	32	8	32	2	8	20	20	8	8
2-3	40	10	40	5	20	8	8	20	20
4-5	20	5	20	10	40	32	32	32	32
6-7	8	2	8	8	32	40	40	40	40
Total	40	25		25		100		100	

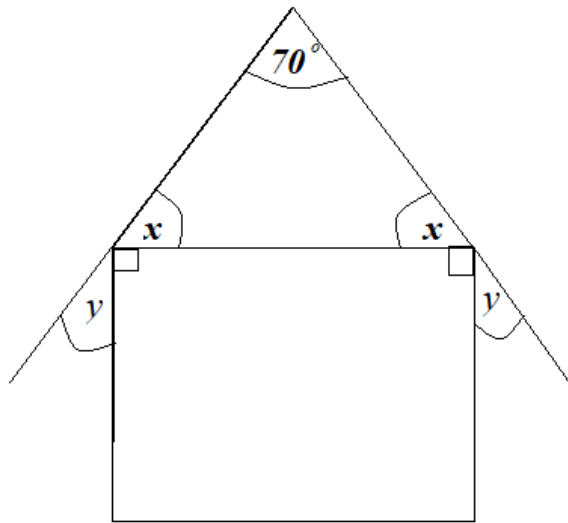
Therefore Choice A matches with question (pie chart)

SECTION B (50 MARKS)
ANSWER ALL QUESTIONS

Question 2

a) Calculate angle x and y in the given diagram

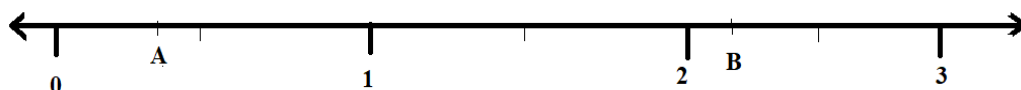
[2]



Sample Response

1	using the property that sum of all interior angles in any triangle is 180°	$x + x + 70 = 180$	[0.5]
2	calculating 'x'	$2x + 70 = 180$ $2x = 110$ $x = 55$	[0.5] <i>(if these steps are shown without showing step 1, then directly 1 mark can be awarded)</i>
3	using property that straight line is 180° ; the angle in rectangle is 90° and substituting angle x	$x + y + 90 = 180$ $55 + y + 90 = 180$	[0.5]
4	calculating 'y'	$y + 145 = 180$ $y = 35$	[0.5] <i>(if these steps are shown without showing step 1, then directly 1 mark can be awarded)</i>

b) Point A and B were placed in a number line.



The numbers were: $A = \frac{1}{2} \times \frac{3}{6} + \frac{2}{5} \div 4$ and $B = \left(\frac{2}{3} + \frac{1}{5} - \frac{1}{2}\right) + \frac{5}{6}$

i) Solve and find which point is **NOT** in the correct place

[2]

Sample Response

1	solving A	$\frac{1}{2} \times \frac{1}{2} + \frac{2}{5} \times \frac{1}{4}$ $\frac{1}{4} + \frac{1}{10} = \frac{5+2}{20} = \frac{7}{20}$ OR 0.35	[1]
2	Solving B	$\left(\frac{20+6-15}{30}\right) + \frac{5}{6} = \frac{11}{30} + \frac{5}{6} = \frac{36}{30}$ OR 1.2	[1]

		<i>B is not in the correct place.</i>	
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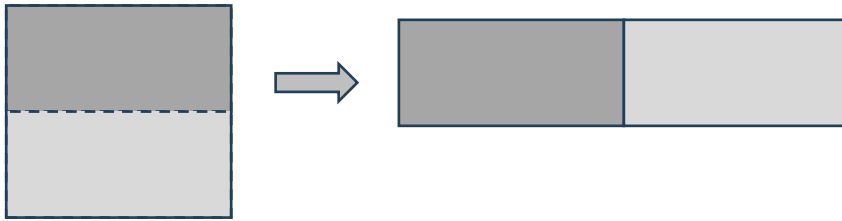
ii) Draw the number line placing both points in the correct place. [1]

Sample Response

1	Redrawing and placing		[0.5 each]
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Question 3

a) A square sheet with side length of 10 cm is cut in the middle and joined along its side.



i) Calculate and find what has happen to its area? [1]

Sample Response

1	Calculating Area	$Original\ Area = 10 \times 10 = 100\ m^2$ $New\ Area = 20 \times 5 = 100\ m^2$	[0.5]
2	Conclusion	<i>The area remains same .</i>	[0.5]

ii) Calculate and find what has happen to its perimeter? [1]

Sample Response

1	Calculating perimeter	$Original\ Perimeter = 4 \times 10 = 40\ m$ $New\ Perimeter = 2(20 + 5) = 50\ m$	[0.5]
2	Conclusion	<i>The area remains same but the perimeter increases.</i>	[0.5]

b) Electromagnetic waves are categorized into seven types based on their wavelength. Long exposure to wavelength less than 300 nanometers is usually harmful to humans.

(1 nanometer = 1.0×10^{-9} meter)

Electromagnetic (EM) Waves	Wavelength
Type I	3.0×10^0 to 3.0×10^3
Type II	1.0×10^{-2} to 1.0×10^1
Type III	7.5×10^{-7} to 1.0×10^{-2}
Type IV	4.0×10^{-7} to 7.0×10^{-7}
Type V	1.0×10^{-8} to 4.0×10^{-7}
Type VI	1.0×10^{-10} to 1.0×10^{-8}
Type VII	1.0×10^{-12} to 1.0×10^{-10}

i) Which type of EM waves should we avoid? How do you know?

[2]

Sample Response

1	Identifying harmful waves	Type V, Type VI and Type VII are harmful	[0.5 each]
2	Reasoning	because their wavelength is less than 3.0×10^{-7}	[0.5]

ii) EM waves with wavelength about 500 nanometers are visible to our eyes. Which type is visible? How do you know?

[1]

Sample Response

1	Identifying visible waves	Type IV is the visible	[0.5]
2	Reasoning	because 500 nanometers is between 4.0×10^{-7} to 7.0×10^{-7}	[0.5]

Question 4

a) There are different properties of multiplication which can be applied to get products. What property is applied in each of the multiplications given below?

i) $24 \times -2 = (20 + 4) \times -2$
 $= (-2 \times 20) + (-2 \times 4)$

[1]

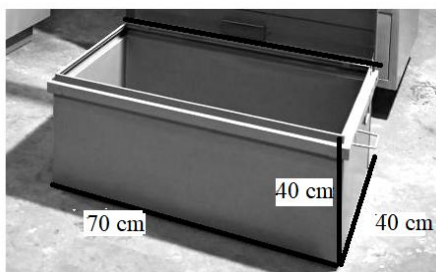
Sample Response				
1	recognizing property	<i>Distributive property</i>	[1]	
ii) $-25 \times 8 = -50 \times 4$				[1]
Sample Response				
1	recognizing property	<i>doubling and halving</i>	[1]	
b) Dorji's saving is Nu 65 and Dhan's saving is Nu 30. Every day from their earning, they save Nu 5 and Nu 10 respectively.				
i) On which day they will have saved the same amount?				[1.5]
marking criteria				
i	Correct equation	$65 + 5x = 30 + 10x$	[0.5]	
i	Finding the day	$65 - 30 = 10x - 5x$ $5x = 35$ $x = 7$	[1]	
ii) Predict who will have more savings on 9th day.				[1.5]
marking criteria				
ii	Finding the value	Dorji = $65 + 5x = 65 + 5(9) = 110$ Dhan Bdr = $30 + 10x = 30 + 10(9) = 120$	[1]	
ii	predicting	Dhan Bdr will have more savings on 9 th day.	[0.5]	
Question 5				
a)	Two numbers are $(5 \times 10^{-3} + 2 \times 10^{-4} + 3 \times 10^{-2})$ and 0.0052. Which number is greater and by how much?			[2]
Sample Response				

1	Converting	$0.0352 \square 0.0052$	[0.5]																	
2	Comparing	$0.0352 > 0.0052$	[0.5]																	
3	Subtraction	$0.0352 - 0.0052 = 0.03$	[0.5]																	
4	Answer	$5 \times 10^{-3} + 2 \times 10^{-4} + 3 \times 10^{-2}$ is greater by 0.03	[0.5]																	
b) How is the volume affected if the length and width of a rectangular prism is doubled? Show your work with an example. [3]																				
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4"><i>Sample Response</i></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Original volume</td> <td> <i>Let the $l=2, w=3, h=5$ Base Area = $(l \times w) = 2 \times 3 = 6 \text{ cm}^3$ Volume = $(BA \times h) = 6 \times 5 = 30 \text{ cm}^3$</i> </td> <td>[0.5]</td> </tr> <tr> <td>2</td> <td>Double the l and w volume</td> <td> <i>When we double the l and w $l=4, w=6, h=5$ Base Area = $(l \times w) = 4 \times 6 = 24 \text{ cm}^3$ Volume = $(BA \times h) = 24 \times 5 = 120 \text{ cm}^3$</i> </td> <td>[0.5] [1]</td> </tr> <tr> <td></td> <td>Conclusion about the volume</td> <td><i>The Base Area becomes 4 times larger, hence, the volume also becomes 4 times larger than the original volume.</i></td> <td>[1]</td> </tr> </tbody> </table>					<i>Sample Response</i>				1	Original volume	<i>Let the $l=2, w=3, h=5$ Base Area = $(l \times w) = 2 \times 3 = 6 \text{ cm}^3$ Volume = $(BA \times h) = 6 \times 5 = 30 \text{ cm}^3$</i>	[0.5]	2	Double the l and w volume	<i>When we double the l and w $l=4, w=6, h=5$ Base Area = $(l \times w) = 4 \times 6 = 24 \text{ cm}^3$ Volume = $(BA \times h) = 24 \times 5 = 120 \text{ cm}^3$</i>	[0.5] [1]		Conclusion about the volume	<i>The Base Area becomes 4 times larger, hence, the volume also becomes 4 times larger than the original volume.</i>	[1]
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	Conclusion about the volume	<i>The Base Area becomes 4 times larger, hence, the volume also becomes 4 times larger than the original volume.</i>	[1]																	
Question 6																				

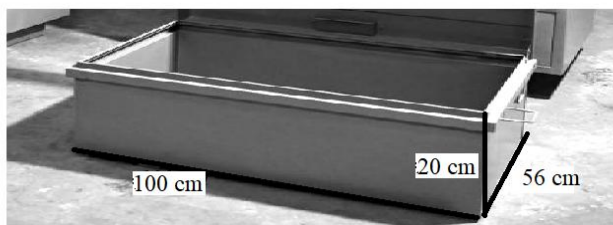
- a) A dealer marks his good 10% above cost price and offers 10% discount. Assume the cost price and calculate profit or loss percent. [2]

Sample Response			
1	assuming CP	$let CP = 100$	
2	mark up % (given)	10%	
3	Marked price	$100 + 10 \% of 100 = 110$ OR $100 + (0.1 * 100) = 110$	[0.5]
4	discount % (given)	10%	
5	Sale price	$110 - (10 \% of 110) = 99$ OR $110 - (0.1 * 110) =$	[0.5]
6	loss	$100 - 99 = 1$	
7	loss %	$\frac{1}{100} \times 100 = 1\%$	[1]

- b) Khandu painted two containers as shown below. Which of the two containers required less paint? Show your work. [3]



Container A



Container B

marking criteria			
1	calculating Surface area	Container A: $2((70 \times 40) + (40 \times 40) + (70 \times 40)) = 14400 \text{ cm}^2$	[1]
2	calculating Surface area	Container B: $2((100 \times 20) + (20 \times 56) + (100 \times 56)) = 17440 \text{ cm}^2$	[1]
3	Decision	Container A requires less paint	[1]

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Question 7

a) A rectangular garden is $(3x + 2)$ m long and $(2x + 5)$ m wide. Find the perimeter of the garden in terms of x . **[2]**

<i>Sample Response</i>			
1	Substituting values in Perimeter formula	$l = 3x + 2, w = 2x + 5$ $P = 3x + 2 + 3x + 2 + 2x + 5 + 2x + 5$	[1]
2	addition	$=10x + 14$	[1]

b) A deck of card contains four suits (Club, Diamond, Heart and Spade). In each suit there is 1 Ace, 3 face cards and 9 number cards.

i) What is the probability of selecting a face card? **[1]**

<i>Sample Response</i>			
1	probability	$Number\ of\ favorable\ outcomes = 12$ $Number\ of\ possible\ outcomes = 52$ $P(E) = \frac{12}{52} OR \frac{3}{13}$	[1]

ii) What is the probability of **NOT** selecting a face card? **[1]**

<i>Sample Response</i>			
1	probability	$P(Not\ E) = 1 - \frac{12}{52} OR 1 - \frac{3}{13}$ $= \frac{40}{52} OR \frac{10}{13}$	[1]

iii) What is the complement event of selecting a club? **[1]**

<i>Sample Response</i>			
1	Any of the two	-NOT selecting a club OR -selecting a heart or a diamond or a spade	[1]

Question 8

a) Subtract $(2x + 4)$ from $(-2x - 6)$. [2]

<i>Sample Response I</i>			
1	Representing $(-2x - 6)$ with models		[0.5]
	taking out $(2x + 4)$ is not possible, so bringing zero pair to take out		[1]
	counting the remaining	$\Rightarrow -4x - 10$	[0.5]

OR

<i>Sample Response II</i>			
1	comprehending meaning of take away	$(-2x - 6) - (2x + 4)$	[0.5]
2	subtraction means adding opposite	$(-2x - 6) + (-2x - 4)$	[0.5]
3	Adding them	$\rightarrow (-2x) + (-2x) - 6 + (-4)$ $\rightarrow -4x - 10$	[1]

b) Construct a triangle ABC with $AB= 6\text{ cm}$, $\angle A = 60^\circ$ and side $AC= 4\text{ cm}$. [3]

<i>Sample Response</i>			
1	rough sketch		[0.5]


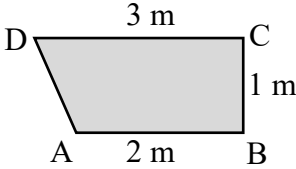
2	drawing 6 cm		[0.5]
	constructing 60°		[0.5]
	drawing 4 cm		[0.5]
	completing and labelling		[1]

Question 9

a) A boy is operating a set of numbers given below: $(2 + 3\frac{2}{5} + \sqrt{64} - 2) \div 5^2$ He got $11\frac{2}{5}$ as solution. Carry out the operations to check his solution.	[2]
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<i>Sample Response</i>			
1	Using BEDMAS	$(2 + 3\frac{2}{5} + \sqrt{64} - 2) \div 5^2$	
2	cancelling 2	$(\cancel{2} + 3\frac{2}{5} + \sqrt{64} - \cancel{2}) \div 5^2$	[0.5]
3	find square root, adding and changing to improper	$(3\frac{2}{5} + 8) = 11\frac{2}{5} = \frac{57}{5}$	[0.5]
4	finding square & dividing and multiplying as inverse of division	$\frac{57}{5} \div 25$ $\frac{57}{5} \times \frac{1}{25} = \frac{57}{125}$	[0.5]
5	Decision	His solution is not correct.	[0.5]

b) A flower bed designed by a landscape architect is as shown below.	
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<p>i) Enlarge the bed applying the following combination of transformations.</p> <ul style="list-style-type: none"> • Step 1: dilate it by a scale factor of 1.5 with dilatation center at A. • Step 2: rotate $\frac{1}{2}$ turn with turn center at C. • Step 3: reflect the flower bed across a longer base. 	[2]
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<i>Sample Response</i>		
<p>1</p> <p>Dilatation</p> <p>Rotation.</p> <p>Reflect</p> <p>Drawing final image</p> <p>labelling</p>		<p>[2] (0.5 for each transformation, 0.5 for labelling and 0.5 for final image)</p>

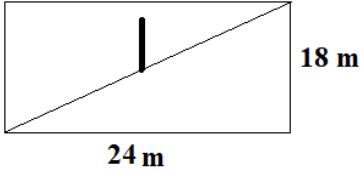
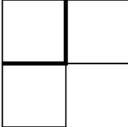
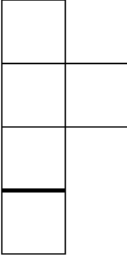
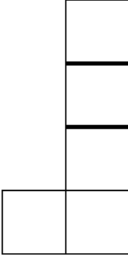
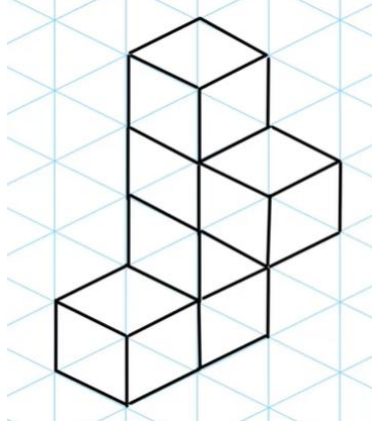
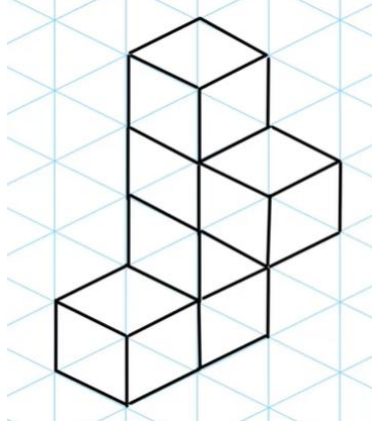
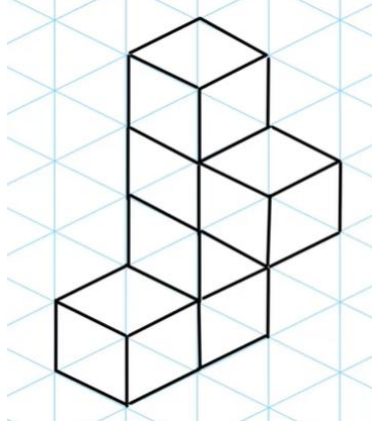
<p>ii) Describe the changes in the dimensions or orientation of the final shape.</p>	[1]
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<i>Sample Response</i>		
<p>1</p> <p>Dimensions</p> <p>Orientation</p>	<p><i>The resulting flower bed after the combination of transformations will have new dimensions of Top base = 4.5 m, Bottom base = 3 meters, and Height = 1.5 m.</i></p> <p><i>It will be enlarged mirror image of the original shape.</i></p>	<p>[0.5]</p> <p>[0.5]</p>

Question 10

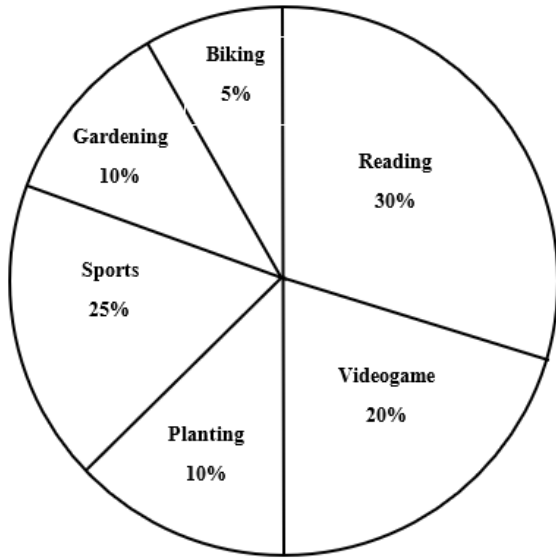
<p>a) A pole is at the center of 18 m by 24 m rectangular play field. How far is the pole from its corner?</p>	[2]
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<p><i>Sample Response</i></p>

1	sketch		[1]						
2	finding the length of diagonal	<p>let the length of diagonal be c using Pythagorean theorem</p> $c = \sqrt{a^2 + b^2}$ $c = \sqrt{18^2 + 24^2}$ $c = \sqrt{324 + 576}$ $c = \sqrt{900}$ $c = 30 \text{ m}$	[1] (0.5 for substitution and 0.5 for $c=30$)						
3	dividing the diagonal by 2	$\frac{30}{2} = 15 \text{ m}$	[0.5]						
<p>b) The following are orthographic face views of a structure made from linking cubes. Use the face views and create an isometric drawing</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>TOP</p> </div> <div style="text-align: center;">  <p>FRONT</p> </div> <div style="text-align: center;">  <p>RIGHT</p> </div> </div>			[3]						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center; padding: 5px;"><i>Sample Response</i></th> </tr> </thead> <tbody> <tr> <td style="width: 15%; padding: 10px; vertical-align: middle;">Isometric drawing</td> <td style="width: 60%; padding: 10px; text-align: center;">  </td> <td style="width: 25%; padding: 10px; vertical-align: middle;"> <p>[3]</p> <p>1 mark each for matching each face view</p> </td> </tr> </tbody> </table>				<i>Sample Response</i>			Isometric drawing		<p>[3]</p> <p>1 mark each for matching each face view</p>
<i>Sample Response</i>									
Isometric drawing		<p>[3]</p> <p>1 mark each for matching each face view</p>							

Question 11														
a) 200 students sat for a mathematics test, 60% of the participants correctly solved a challenging problem.														
i) Calculate the number of participants who solved the problem correctly		[1]												
<table border="1" style="margin: auto;"> <tr> <th colspan="4"><i>Sample Response</i></th> </tr> <tr> <td style="width: 5%;">1</td> <td style="width: 30%;">Representing percent</td> <td style="width: 55%;">$60\% \text{ of } 200 = ?$</td> <td style="width: 10%; text-align: center;">[0.5]</td> </tr> <tr> <td></td> <td>Solution</td> <td>$\frac{60}{100} \times 200 = 120$</td> <td style="text-align: center;">[0.5]</td> </tr> </table>			<i>Sample Response</i>				1	Representing percent	$60\% \text{ of } 200 = ?$	[0.5]		Solution	$\frac{60}{100} \times 200 = 120$	[0.5]
<i>Sample Response</i>														
1	Representing percent	$60\% \text{ of } 200 = ?$	[0.5]											
	Solution	$\frac{60}{100} \times 200 = 120$	[0.5]											
ii) 40 participants did not try the question. What percent of the total participants did this group represent?		[1]												
<table border="1" style="margin: auto;"> <tr> <th colspan="4"><i>Sample Response</i></th> </tr> <tr> <td style="width: 5%;">1</td> <td style="width: 30%;">Representing fraction</td> <td style="width: 55%;">$\frac{40}{200} \text{ participants}$</td> <td style="width: 10%; text-align: center;">[0.5]</td> </tr> <tr> <td></td> <td>Percent calculation</td> <td> $\frac{40}{200} \times 100$ $= \frac{20}{100} = 20\%$ </td> <td style="text-align: center;">[0.5]</td> </tr> </table>			<i>Sample Response</i>				1	Representing fraction	$\frac{40}{200} \text{ participants}$	[0.5]		Percent calculation	$\frac{40}{200} \times 100$ $= \frac{20}{100} = 20\%$	[0.5]
<i>Sample Response</i>														
1	Representing fraction	$\frac{40}{200} \text{ participants}$	[0.5]											
	Percent calculation	$\frac{40}{200} \times 100$ $= \frac{20}{100} = 20\%$	[0.5]											
b) The data collected for 200 students is shown in the circle graph below.		[3]												

Favourite Activities



Write three interpretations from the graph above.

Sample Response

- *Reading is the most preferred activity overall.*
- *Playing sports and playing video games are the next preferred activities.*
- *Gardening and painting have moderate preference levels.*
- *Biking is the least preferred activity.*
- *Indoor activities have a slightly higher preference than outdoor activities*
- *(Any response appropriate to the chart above)*

[3]

(1 mark each).