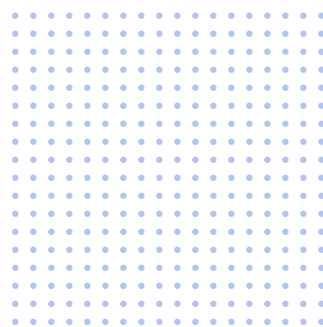




FOR CBSE CLASS 10 PREPARATION

CBSE Class 10 Sample Paper 2027 Solution (Marking Scheme) for Maths Basic

EXAM

CBSE Class 10

YEAR

2027

TYPE

Solutions

SUBJECT

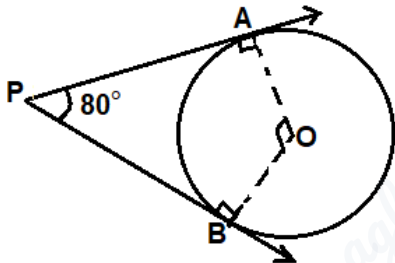
Maths

MATHEMATICS BASIC (241)
MARKING SCHEME
CLASS - X (2026 - 27)
SECTION: A

[Solution of MCQs of 1 Mark each, no part marks]

Q. No.	ANS	HINTS/SOLUTION	Marks
1.	D	$\text{HCF} \times \text{LCM} = \text{Product of two numbers}$ $40 \times 252 \times k = 2520 \times 6600$ <div style="border: 1px solid black; padding: 2px; display: inline-block;">(D) 1650</div>	1
2.	C	$\alpha + \beta = 2; \alpha\beta = -\frac{5}{2}$ $(\alpha - \beta)^2 = (\alpha + \beta)^2 - 4\alpha\beta = 2^2 - 4\left(-\frac{5}{2}\right) = 14$ <div style="border: 1px solid black; padding: 2px; display: inline-block;">(C) 14</div>	1
3.	C	For unique solution $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} \Rightarrow \frac{4}{2} \neq \frac{p}{2} \Rightarrow p \neq 4$ <div style="border: 1px solid black; padding: 2px; display: inline-block;">(C) $p \neq 4$</div>	1
4.	C	Let numerator be x and denominator be y Given, $x + y = 11$ $\frac{x}{(y+1)} = \frac{1}{2}$ Solving these equations, we get $x = 4, y = 7; \therefore \text{Fraction} = \frac{4}{7}$ <div style="border: 1px solid black; padding: 2px; display: inline-block;">(C) $\frac{4}{7}$</div>	1
5.	D	Let the roots be α and $\frac{1}{\alpha}$ Product of roots $\alpha \times \frac{1}{\alpha} = \frac{c}{a} \Rightarrow 1 = \frac{c}{a} \Rightarrow a = c$ <div style="border: 1px solid black; padding: 2px; display: inline-block;">(D) $a = c$</div>	1
6.	C	$a_{10} = a + (10 - 1)d = p + 9q$ <div style="border: 1px solid black; padding: 2px; display: inline-block;">(C) $p + 9q$</div>	1
7.	B	$210 = 21 + (n - 1)21 \Rightarrow n = 10$ <div style="border: 1px solid black; padding: 2px; display: inline-block;">(B) 10^{th}</div>	1

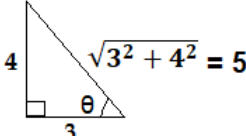
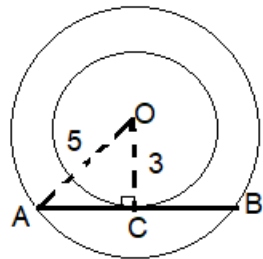
8.	D	Using Section formula, $\frac{3y+5}{3+1} = 2 \Rightarrow \frac{3y+5}{4} = 2 \Rightarrow y = 1$ <div>(D) 1</div>	1																		
9.	C	INDEPENDENCE; Total number of letters = 12 Number of times 'I' occurs = 1; Number of times 'E' occurs = 4 $P(\text{most occurring vowel 'E'}) = \frac{4}{12} = \frac{1}{3}$ <div>(C) $\frac{1}{3}$</div>	1																		
10.	B	$\frac{N}{2} = \frac{66}{2} = 33$, which lies in the interval 10-15 <table><thead><tr><th>Class</th><th>Frequency</th><th>Cumulative frequency</th></tr></thead><tbody><tr><td>0 – 5</td><td>10</td><td>10</td></tr><tr><td>5 – 10</td><td>15</td><td>25</td></tr><tr><td>10 – 15</td><td>12</td><td>37</td></tr><tr><td>15 – 20</td><td>20</td><td>57</td></tr><tr><td>20 – 25</td><td>9</td><td>66</td></tr></tbody></table> <p>Median class $\rightarrow$ 10 – 15 $\Rightarrow$ Median Class is 10-15 Lower limit of median class = 10 <div>(B) 10</div></p>	Class	Frequency	Cumulative frequency	0 – 5	10	10	5 – 10	15	25	10 – 15	12	37	15 – 20	20	57	20 – 25	9	66	1
Class	Frequency	Cumulative frequency																			
0 – 5	10	10																			
5 – 10	15	25																			
10 – 15	12	37																			
15 – 20	20	57																			
20 – 25	9	66																			
11.	C	(Distance of point from the centre) ² = (Length of tangent) ² + (radius) ² $(10)^2 = (8)^2 + (\text{radius})^2 \Rightarrow r = \sqrt{100 - 64} \Rightarrow r = 6$ <div>(C) 6 cm</div>	1																		
12.	B	Mode = 3Median – 2Mean $\Rightarrow$ Mode = $3 \times 30 - 2 \times 32 \Rightarrow$ Mode = 26 <div>(B) 26</div>	1																		
13.	B	(Hypotenuse) ² = (Base) ² + (Perpendicular) ² $\Rightarrow (15)^2 = (\text{Base})^2 + (12)^2$ $\Rightarrow$ Base = 9 m <div>(B) 9m</div>	1																		
14.	A	$\sin^2 60^\circ - 2 \tan^2 45^\circ - \cos^2 30^\circ = \left(\frac{\sqrt{3}}{2}\right)^2 - 2(1)^2 - \left(\frac{\sqrt{3}}{2}\right)^2 = -2$ <div>(A) -2</div>	1																		
15.	A	$\frac{\text{Perimeter of First Triangle}}{\text{Perimeter of second Triangle}} = \frac{\text{Side of first Triangle}}{\text{Side of second Triangle}}$ $\Rightarrow \frac{28}{35} = \frac{8}{\text{Side of second Triangle}} \Rightarrow \text{side of second triangle} = 10\text{cm}$ <div>(A) 10cm</div>	1																		

16.	B	<p>In $\triangle ABC$ and $\triangle PQR$, $\angle B = \angle Q$; $\angle R = \angle C$; $\frac{AB}{PQ} = \frac{2}{1}$ $\therefore \triangle ABC \sim \triangle PQR$ Hence , the triangles are similar but not congruent because $AB \neq PQ$ (B) Similar but not congruent</p>	1
17.	D	<p>$\angle APB = 80^\circ$ Join OA and OB $\angle OAP = \angle OBP = 90^\circ$ (Radius through the point of contact is perpendicular to tangent) In Quadrilateral AOBP, $\angle APB + \angle OAP + \angle AOB + \angle OBP = 360^\circ$ $\Rightarrow 80^\circ + 90^\circ + \angle AOB + 90^\circ = 360^\circ$ $\Rightarrow \angle AOB = 100^\circ$ (D) 100°</p> 	1
18.	B	<p>Volume of cube, $a^3 = 64 \Rightarrow a = 4$ cm On joining two cubes of side = 4 cm, we get a cuboid whose Length (l) = 8 cm, Breadth (b) = 4 cm, Height (h) = 4 cm Surface area of resulting cuboid = $2(lb + bh + hl)$ $= 2(8 \times 4 + 4 \times 4 + 4 \times 8)$ $= 160 \text{ cm}^2$ (B) 160 cm^2</p>	1
19.	A	<p>$P(\text{getting 8 on rolling a die}) = \frac{0}{8}$ This is an impossible event as the numbers on the faces of a die are 1,2,3,4,5 and 6 (A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)</p>	1
20.	B	<p>(B) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A)</p>	1

Section –B

[This section comprises of solution of very short answer type questions (VSA) of 2 marks each]

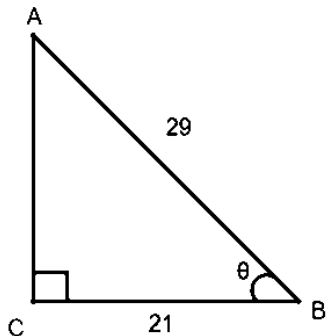
21(A).	<p>$520 = 2^3 \times 5 \times 13$; $468 = 2^2 \times 3^2 \times 13$ $\text{LCM} = 2^3 \times 3^2 \times 5 \times 13 = 4680$ $\therefore$ The required number is $(4680 - 17)$. i.e., 4663</p>	<p>1 $\frac{1}{2}$ $\frac{1}{2}$</p>
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	OR	
21(B).	$(25)^n = (5^2)^n = 5^{2n}$ So, prime factorization of $(25)^n$ contains only 5 and this factorization is unique. Now, for $(25)^n$ to end with digit 0, there must be pair of 2 and 5 in its prime factorization. But 2 is not a factor of $(25)^n$. Hence, $(25)^n$ can never end with digit zero for any natural number.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
22.	$\frac{\sin\theta}{\cos\theta} = \frac{4}{3} \Rightarrow \tan\theta = \frac{4}{3}$ $\therefore \sin\theta + \cos^2\theta - 1 = \frac{4}{5} + \frac{9}{25} - 1 = \frac{4}{25}$ 	$\frac{1}{2} + \frac{1}{2}$ 1
23.	Since, 3 is a zero of $p(x) = 2x^2 - 3x + p \Rightarrow p(3) = 0 \Rightarrow 2(3)^2 - 3(3) + p = 0$ $\Rightarrow p = -9$ Let another zero be β , $3 + \beta = \frac{-(-3)}{2}$ (sum of zeroes) $\Rightarrow \beta = -\frac{3}{2}$	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
24.	$\left. \begin{array}{l} BQ = QA \\ = 5 \text{ cm} \\ CP = PA \\ = 9 \text{ cm} \end{array} \right\} \text{ (Lengths of tangents from an external point to a circle are equal)}$ $PQ = AP - AQ = 9\text{cm} - 5\text{cm} = 4\text{cm}$ For visually Impaired students only Join OC, OA $\angle ACO = 90^\circ$ (Radius through the point of contact is perpendicular to tangent) In rt $\triangle ACO$, $AC = \sqrt{OA^2 - OC^2} = 4\text{cm}$ $\therefore AB = 2(AC)$ (perpendicular from centre bisects the chord) $= 2 \times 4 \text{ cm} = 8 \text{ cm}$ 	$\frac{1}{2} + \frac{1}{2}$ 1 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
25(A).	Since, diagonals of parallelogram bisect each other $\therefore$ Midpoint of AC = midpoint of BD $\Rightarrow \left(\frac{3+a}{2}, \frac{1+b}{2}\right) = \left(\frac{5+4}{2}, \frac{1+3}{2}\right)$ $\Rightarrow \frac{3+a}{2} = \frac{9}{2}$ and $\frac{1+b}{2} = \frac{4}{2}$ $\Rightarrow a = 6; b = 3$	$\frac{1}{2}$ 1 $\frac{1}{2}$
	OR	
25(B).	$PA = PB \Rightarrow \sqrt{(x-1)^2 + (y-4)^2} = \sqrt{(x+1)^2 + (y-2)^2}$ $\Rightarrow x^2 - 2x + 1 + y^2 - 8y + 16 = x^2 + 2x + 1 + y^2 - 4y + 4$ $\Rightarrow 4x + 4y = 12$ $\Rightarrow x + y = 3$	$\frac{1}{2}$ 1 $\frac{1}{2}$

Section –C

[This section comprises of solution short answer type questions (SA) of 3 marks each]

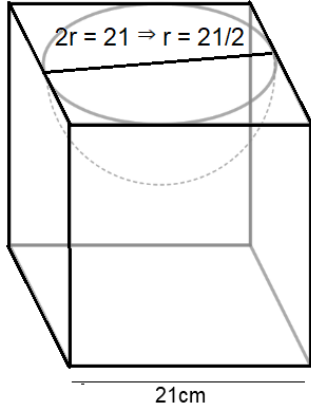
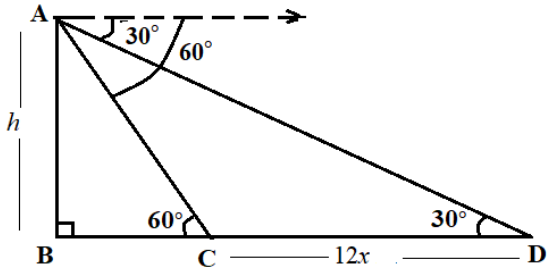
26.	<p>Let $2 + 3\sqrt{5}$ be a rational.</p> <p>Then $2 + 3\sqrt{5} = \frac{p}{q}$, where p and q are integers and $q \neq 0$</p> $\sqrt{5} = \frac{p - 2q}{3q}$ <p>Since p,q are integers, so $\frac{p - 2q}{3q}$ will be rational number.</p> <p>But $\sqrt{5}$ is irrational</p> <p>Since, rational is not equal to irrational</p> <p>This is a contradiction</p> <p>Hence, our assumption is incorrect. Therefore, $2 + 3\sqrt{5}$ is irrational.</p>	<p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>
27(A).	<p>$AB + BC + CA = AB + BQ + CQ + AC$ $= AB + BP + CR + AC$ (BQ = BP and CQ = CR, lengths of tangents from an external point to a circle are equal)</p> $= AP + AR$ $= 2AP \quad (AP = AR)$ <p>Hence, $AP = \frac{1}{2} (AB + BC + CA)$</p>	<p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p>
	<p>For visually impaired students only</p> <p>Parallelogram ABCD circumscribes a circle as shown in figure.</p> <p>Lengths of tangents drawn to a circle from an external point are equal.</p> <p>So, $AP = AS$, $PB = BQ$, $CR = CQ$, $DR = DS$</p> <p>On adding the above equations,</p> $(AP + PB) + (CR + RD) = (AS + DS) + (CQ + QB)$ $\Rightarrow AB + CD = AD + BC$ $\Rightarrow 2AB = 2BC \text{ (Opposite sides of parallelogram are equal)}$ <p>Thus, $AB = BC$</p> <p>Since, ABCD is a parallelogram with pair of adjacent sides equal.</p> <p>Hence, ABCD is a rhombus.</p>	<div data-bbox="986 1025 1342 1308" data-label="Image"> </div> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>
	OR	
27(B).	<p>In $\triangle APB$, $\angle APB + \angle BAP + \angle ABP = 180^\circ$ $\angle APB + 2\angle BAP = 180^\circ$ ($\angle BAP = \angle ABP$)</p> <p style="text-align: center;">_____ (i)</p> <p>$\angle OAB + \angle BAP = 90^\circ \Rightarrow \angle BAP = 90^\circ - \angle OAB$</p> <p style="text-align: center;">_____ (ii)</p> <p>(tangent is perpendicular to the radius at the point of contact)</p>	<div data-bbox="927 1715 1353 1957" data-label="Image"> </div> <p>$\frac{1}{2}$ (for correct figure)</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>

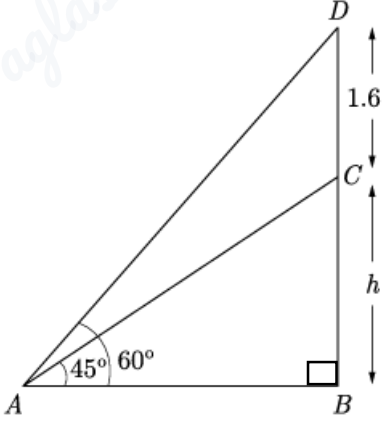
	Substituting $\angle BAP$ in (i), we get $\angle APB + 2(90^\circ - \angle OAB) = 180^\circ$ Hence, $\angle APB = 2\angle OAB$	1 $\frac{1}{2}$																																			
28.	$A(-3, -1); B(-8, 9)$ are given points Let the ratio in which AB is divided be $k:1$ Coordinates of the required point are $\left(\frac{-8k-3}{k+1}, \frac{9k-1}{k+1}\right)$ Hence, $\frac{-8k-3}{k+1} = -6 \Rightarrow k = \frac{3}{2}$, i.e., Required ratio is 3:2 $\therefore y = \frac{9\left(\frac{3}{2}\right)-1}{\left(\frac{3}{2}\right)+1} \Rightarrow y = 5$	$\frac{1}{2}$ $\frac{1}{2}$ 1 1																																			
29.	$AC = \sqrt{(AB)^2 - (BC)^2} = \sqrt{29^2 - 21^2}$ $= \sqrt{400} = 20$ units $\sin\theta = \frac{AC}{AB} = \frac{20}{29}$, $\cos\theta = \frac{BC}{AB} = \frac{21}{29}$ (i) $1 + \tan^2\theta = 1 + \left(\frac{20}{21}\right)^2 = \frac{841}{441}$ (ii) $\cos^2\theta - \sin^2\theta = \left(\frac{21}{29}\right)^2 - \left(\frac{20}{29}\right)^2 = \frac{41}{841}$	 $\frac{1}{2}$ $\frac{1}{2}$ 1 1																																			
30(A).	<table><thead><tr><th>Class interval</th><th>f_i</th><th>x_i (mid-value)</th><th>$u_i = \frac{x_i - 45}{h}$</th><th>$f_i u_i$</th></tr></thead><tbody><tr><td>20-30</td><td>8</td><td>25</td><td>-2</td><td>-16</td></tr><tr><td>30-40</td><td>6</td><td>35</td><td>-1</td><td>-6</td></tr><tr><td>40-50</td><td>x</td><td>45</td><td>0</td><td>0</td></tr><tr><td>50-60</td><td>11</td><td>55</td><td>1</td><td>11</td></tr><tr><td>60-70</td><td>y</td><td>65</td><td>2</td><td>2y</td></tr><tr><td>Total</td><td>25+ x+ y</td><td></td><td></td><td>2y - 11</td></tr></tbody></table> <p>Assumed mean(A) = 45, Width of the interval (h) = 10 $25 + x + y = 50 \Rightarrow x + y = 25 \dots (1)$ $\text{Mean} = 45 + \left(\frac{2y - 11}{50}\right) \times 10 \Rightarrow 48 = 45 + \left(\frac{2y - 11}{5}\right)$ $\Rightarrow y = 13$ $\therefore$ from (1), $x = 12$</p>	Class interval	f_i	x_i (mid-value)	$u_i = \frac{x_i - 45}{h}$	$f_i u_i$	20-30	8	25	-2	-16	30-40	6	35	-1	-6	40-50	x	45	0	0	50-60	11	55	1	11	60-70	y	65	2	2y	Total	25+ x+ y			2y - 11	1 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
Class interval	f_i	x_i (mid-value)	$u_i = \frac{x_i - 45}{h}$	$f_i u_i$																																	
20-30	8	25	-2	-16																																	
30-40	6	35	-1	-6																																	
40-50	x	45	0	0																																	
50-60	11	55	1	11																																	
60-70	y	65	2	2y																																	
Total	25+ x+ y			2y - 11																																	
	OR																																				
30(B).	<table><thead><tr><th>Weight (in kg)</th><th>No. of students</th></tr></thead><tbody><tr><td>35 - 45</td><td>5</td></tr><tr><td>45 - 55</td><td>10</td></tr><tr><td>Modal class $\rightarrow$ 55 - 65</td><td>20</td></tr><tr><td>65 - 75</td><td>12</td></tr><tr><td>75 - 85</td><td>3</td></tr></tbody></table> <p>f_0 f_1 f_2</p>	Weight (in kg)	No. of students	35 - 45	5	45 - 55	10	Modal class $\rightarrow$ 55 - 65	20	65 - 75	12	75 - 85	3	1																							
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35 - 45	5																																				
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Modal class $\rightarrow$ 55 - 65	20																																				
65 - 75	12																																				
75 - 85	3																																				

	$\therefore$ Modal class = 55 – 65, $l = 55$, $h = 10$ $\text{Mode} = l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2} \right) h = 55 + \left(\frac{20 - 10}{2(20) - 10 - 12} \right) 10 = 60.555\dots$ Hence, modal weight of students is 60.56 kg (approx.)	$\frac{1}{2}$ 1 $\frac{1}{2}$
31.	Let the ten's place digit be x Let the unit's place digit be y Number = $10x + y$ Reversed Number = $10y + x$ ATQ $x + y = 9$ -----(1) $9(10x + y) = 2(10y + x)$ -----(2) Solving (1) and (2), we get $x = 1, y = 8$ Required Number = 18	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$

Section –D**[This section comprises of solution of long answer type questions (LA) of 5 marks each]**

32.	Correct figure, Given, To prove and Construction Correct proof of theorem	$4 \times \frac{1}{2} = 2$ 3
33(A).	Let the speed of the train be x km/h Then the increased speed of the train be $(x + 5)$ km/h ATQ, $\frac{360}{x} - \frac{360}{x+5} = 1$ On simplifying, we get $x^2 + 5x - 1800 = 0$ $x = \frac{-5 \pm \sqrt{5^2 + 4(1800)}}{2}$ $x = 40, -45$ Hence, $x = 40$ $\therefore$ Speed of the train = 40 km/h	$\frac{1}{2}$ 1 1 1 1 $\frac{1}{2}$
OR		
33(B).	Let the number of marbles John had in the beginning be x Then the number of marbles Jivanti had in the beginning = $45 - x$ ATQ $(x - 5)(40 - x) = 124$ $x^2 - 45x + 324 = 0$ $x = \frac{45 \pm \sqrt{45^2 - 4(324)}}{2}$ $x = 36, 9$	$\frac{1}{2}$ 1 $\frac{1}{2}$ 1 1

	<p><u>Case 1</u> Number of marbles John had in the beginning = $x = 36$ Then, number of marbles Jivanti had in the beginning = $45 - x = 9$</p> <p><u>Case 2</u> Number of marbles John had in the beginning = $x = 9$ Then, number of marbles Jivanti had in the beginning = $45 - x = 36$</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>
34.	<p>Side of cube (a) = 21 cm Radius of hemi-sphere (r) = $\frac{21}{2}$ cm</p> <p>i) Volume of solid = $V_{\text{Cube}} - V_{\text{Hemi-sphere}}$</p> $= a^3 - \frac{2}{3}\pi r^3$ $= 21^3 - \frac{2}{3} \times \frac{22}{7} \times \frac{21 \times 21 \times 21}{2 \times 2 \times 2}$ $= 6835.5 \text{ cm}^3$ <p>ii) Surface area of wooden block</p> $= 6a^2 - \pi r^2 + 2\pi r^2$ $= 6a^2 + \pi r^2 = 6(21)^2 + \frac{22}{7} \times \left(\frac{21}{2}\right)^2$ $= 2992.5 \text{ cm}^2$	 <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}+1$</p> <p>1</p>
35(A).	<p>Let height of drone (AB) be h m Let speed of ambulance be x m/min $CD = 12x$ m</p> <p>In rt $\triangle ABC$, $\tan 60^\circ = \frac{AB}{BC} \Rightarrow BC = \frac{h}{\sqrt{3}}$</p> <p>In rt $\triangle ABD$, $\tan 30^\circ = \frac{AB}{BD} \Rightarrow BD = h\sqrt{3}$</p> $\Rightarrow \frac{h}{\sqrt{3}} + 12x = h\sqrt{3} \Rightarrow h = 6\sqrt{3}x$ <p>$\therefore BC = 6x$</p> <p>time taken from C to B is $\frac{6x}{x} = 6$ minutes</p> <p>$\therefore$ Total time taken = $(6+12)$ minutes = 18 minutes</p>	 <p>1 for correct figure</p> <p>1</p> <p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>
	OR	

<p>35(B).</p> <p>Let height of the pedestal (BC) be h m CD = height of statue = 1.6 m</p> <p>In rt $\triangle ABC$,</p> $\tan 45^\circ = \frac{BC}{AB} \Rightarrow 1 = \frac{h}{AB}$ $\Rightarrow AB = h \text{ -----(i)}$ <p>In rt $\triangle ABD$,</p> $\tan 60^\circ = \frac{BD}{AB} \Rightarrow \sqrt{3} = \frac{h+1.6}{AB}$ $\Rightarrow AB = \frac{h+1.6}{\sqrt{3}} \text{ -----(ii)}$ <p>Equating (i) and (ii), we get</p> $h = \frac{h+1.6}{\sqrt{3}}$ $(\sqrt{3}-1)h = 1.6$ $h = \frac{1.6}{\sqrt{3}-1} = 0.8(\sqrt{3} + 1)$ <p>$\therefore$ height of the pedestal is $0.8(\sqrt{3} + 1)$ m</p>		<p>1 for correct figure</p> <p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p>
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Section –E

[This section comprises solution of 3 case- study/passage-based questions of 4 marks]

<p>36.</p>	<p>Central angle, $\theta = 60^\circ$, $r = 4\text{cm}$, $R = 10\text{cm}$</p> <p>(i) Required area of one face of the fan = $\frac{\theta}{360} \pi R^2 = \frac{60}{360} \times \frac{22}{7} \times 10^2$ $= 52.38 \text{ cm}^2$</p> <p>(ii) Required area of black sheet = $\frac{\theta}{360} \pi (R^2 - r^2)$ $= \frac{60}{360} \times \frac{22}{7} (10^2 - 4^2) = 44 \text{ cm}^2$</p> <p>(iii) (A) boundary length of black sheet region on one face of the fan $= 2(10 - 4) + \frac{60}{360} \times 2 \times \frac{22}{7} (10 + 4)$ $= 12 + \frac{44}{3} = \frac{80}{3} \text{ cm}$ OR (iii) (B) $2(10 - 4) + \frac{\theta}{360} \times 2 \times \frac{22}{7} (10 + 4) = 29.6$ $\frac{\theta}{360} \times 88 = 17.6$ $\theta = \frac{17.6 \times 360}{88} = 72^\circ$</p>	<p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p>
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	<p>For visually Impaired students only</p> <p>Radius, i.e., range of distance covered, $r = 24$ m; Central angle, $\theta = 70^\circ$</p> <p>(i) $\frac{A}{l} = \frac{\frac{\theta}{360}\pi r^2}{\frac{\theta}{360}\times 2\pi r} \Rightarrow A = \frac{1}{2} lr$</p> <p>(ii) Area monitored $= \frac{\theta}{360} \pi r^2$</p> $= \frac{70}{360} \times \frac{22}{7} \times 24^2 = 352 \text{ m}^2$ <p>(iii) (A) $\frac{\theta}{360} \pi (24)^2 = \frac{150}{100} \times 352$</p> $\theta = \frac{3}{2} \times \frac{7 \times 360}{22 \times 24^2} \times 352$ $\theta = 105^\circ$ <p style="text-align: center;">OR</p> <p>(iii) (B) $\frac{91}{360} \pi r^2 = \frac{130}{100} \times 352$</p> $r^2 = \frac{13}{10} \times \frac{7 \times 360}{22 \times 91} \times 352 = 36 \times 16$ $r = 24 \text{ m}$	<p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p>
37.	<p>Number of trees planted by class I $= 2\{2(1) + 3\} = 10$ Number of trees planted by class II $= 2\{2(2) + 3\} = 14$ Number of trees planted by class III $= 2\{2(3) + 3\} = 18$so on Hence, it follows AP: 10, 14, 18, 22,</p> <p>(i) Common difference $= 14 - 10 = 4$</p> <p>(ii) Number of trees planted by class VI $= 2\{2(6) + 3\} = 30$</p> <p>(iii) (A) Total number of trees planted $= S_n = \frac{n}{2}\{2a + (n - 1)d\}$</p> $= \frac{12}{2}\{2(10) + (12 - 1)4\}$ $= 6 \times 64 = 384$ <p style="text-align: center;">OR</p> <p>(iii) (B) Let class that planted 34 trees be n.</p> $2\{2(n) + 3\} = 34$ $2(n) + 3 = 17$ $n = 7$	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>

<p>38.</p>	<p>Total number T-shirts printed = 400 Number of T-shirts with good print = 312 Number of T-shirts with minor print defect = 54</p> <p>(i) $P(\text{Harish buys T-shirt}) = \frac{312}{400}$ or $\frac{39}{50}$</p> <p>(ii) $P(\text{Trader buys T-shirt}) = \frac{312+54}{400} = \frac{366}{400}$ or $\frac{183}{200}$</p> <p>(iii) (A) $P(\text{T-shirt is not good}) = 1 - P(\text{T-shirt is good}) = 1 - \frac{312}{400} = \frac{88}{400}$ or $\frac{11}{50}$</p> <p style="text-align: center;">OR</p> <p>(iii) (B) $P(\text{neither Harish nor Trader buys T-shirt}) = \frac{400-54-312}{400} = \frac{34}{400}$ or $\frac{17}{200}$</p>	<p>1</p> <p>1</p> <p>1+1</p> <p>1+1</p>
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