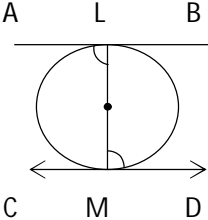


Class - X
Mathematics-Basic (241)
Marking Scheme-SQP 2019-20

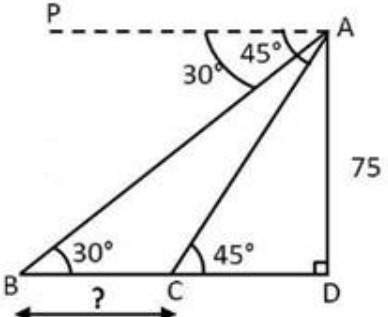
Max. Marks: 80

Duration: 3 hrs.

1.	(b) 42	(1)
2.	(a) $2 \text{ Mean} = 3 \text{ Median} - \text{Mode}$	(1)
3.	(d) 70°	(1)
4.	(b) $5^2 \times 13$	(1)
5.	(a) $\frac{1}{26}$	(1)
6.	(d) 4	(1)
7.	(c) 5.010010001...	(1)
8.	(c) 3	(1)
9.	(b) 5 units	(1)
10.	(b) (- 3, 5)	(1)
11.	(2, 3)	(1)
12.	2 OR 1	(1)
13.	1	(1)
14.	0	(1)
15.	4:9	(1)
16.	$\sin P = 1/\sqrt{2}$	(1)

23.	<div style="text-align: center;">  </div> <p style="text-align: center;"> $\angle OLA = 90^\circ$ $\angle OMD = 90^\circ$ $\angle OLA = \angle OMD$ </p> <p>Which are alternate angles, hence $AB \parallel CD$</p>	(1)
		(1)
24.	<p>LHS = $\tan 48^\circ \tan 23^\circ \tan 42^\circ \tan 67^\circ$</p> <p style="padding-left: 40px;">$= \cot (90^\circ - 48^\circ) \cot (90^\circ - 23^\circ) \tan 42^\circ \tan 67^\circ$</p> <p style="padding-left: 40px;">$= \cot 42^\circ \cot 67^\circ \tan 42^\circ \tan 67^\circ$</p> <p style="padding-left: 40px;">$= 1$</p> <p style="text-align: center;">OR</p> <p>$= \cos 48^\circ \cos 42^\circ - \sin 48^\circ \sin 42^\circ$</p> <p>$= \sin (90^\circ - 48^\circ) \sin (90^\circ - 42^\circ) - \sin 48^\circ \sin 42^\circ$</p> <p>$= \sin 42^\circ \sin 48^\circ - \sin 48^\circ \sin 42^\circ = 0$</p>	(1)
		(1)
25.	<p style="text-align: center;">$r = \frac{7}{2}$</p> <p>Area of Circle = $\frac{\pi r^2}{4} = \frac{77}{2} \text{cm}^2$</p>	(1)
		(1)
26.	<p>(i) 3 Students</p> <p>(ii) $\frac{x^2 + 2x + 1}{x + 1}$</p> <p>$= \frac{(x + 1)^2}{x + 1} = x + 1$</p>	(1)
		(1)
SECTION - C		

	<p>OR</p> $\text{L.H.S.} = \frac{\tan A + \sin A}{\tan A - \sin A} \quad (1)$ $= \frac{\frac{\sin A}{\cos A} + \sin A}{\frac{\sin A}{\cos A} - \cos A} = \frac{\sin A [\sec A + 1]}{\sin A [\sec A - 1]} \quad \left(\frac{1}{2}\right)$ $= \text{R.H.S} \quad \left(\frac{1}{2}\right)$	<p>(1)</p> <p>(1)</p> <p>(1)</p>
31.	<p>Let us assume that $5 - \sqrt{3}$ is a rational</p> <p>We can find co prime a & b ($b \neq 0$) such that</p> $5 - \sqrt{3} = \frac{a}{b}$ <p>Therefore $5 - \frac{a}{b} = \sqrt{3}$</p> <p>So we get $\frac{5b-a}{b} = \sqrt{3}$</p> <p>Since a & b are integers, we get $\frac{5b-a}{b}$ is rational, and so $\sqrt{3}$ is rational. But $\sqrt{3}$ is an irrational number</p> <p>Which contradicts our statement</p> <p>$\therefore 5 - \sqrt{3}$ is irrational</p> <p style="text-align: center;">OR</p> $616 = 32 \times 19 + 8$ $\Rightarrow r = 8 \neq 0$ $32 = 8 \times 4 + 0$ $\Rightarrow r = 0$ <p>The HCF of 32 and 616 is 8.</p>	<p>$\left(\frac{1}{2}\right)$</p> <p>(1)</p> <p>$\left(\frac{1}{2}\right)$</p> <p>(1)</p> <p>(1)</p> <p>(2)</p> <p>(1)</p>
32.		(1)

37.	 <p>For correct fig</p> <p>In $\triangle ADC$, $\tan 45^\circ = \frac{75}{CD}$</p> <p>$1 = \frac{75}{CD} \Rightarrow CD = 75$</p> <p>In $\triangle ADB$, $\tan 30^\circ = \frac{75}{BD}$</p> $\frac{1}{\sqrt{3}} = \frac{75}{BD}$ <p>$\Rightarrow BD = 75\sqrt{3}$</p> <p>$\Rightarrow$Distance between two ships = $BC = 75(\sqrt{3} - 1)m$</p> <p style="text-align: right;">$= 54.9 \text{ m}$</p>	(1) (1) (1) (1)
38.	<p>For correct, Given, To prove, construction and Figure</p> <p>For correct proof</p> <p style="text-align: center;">OR</p> <p>For correct statement, Given, To prove, Construction and Figure</p>	$(4 \times \frac{1}{2})$ $= 2)$ (2) $(5 \times \frac{1}{2})$ $= 2\frac{1}{2})$

	For correct proof	$(1\frac{1}{2})$												
39.	<p>A.T. Q.</p> $\pi r^2 \times 1800 = \pi \times \frac{1}{2} \times \frac{1}{2} \times 8$ $\Rightarrow r^2 = \frac{1}{900}$ $\Rightarrow r = \frac{1}{30}$ <p>\therefore Thickness of wire = $\frac{1}{15} \text{ cm}$</p> <p style="text-align: center;">OR</p> $\frac{4}{3} \pi r^3 = \pi R^2 h$ $\frac{4}{3} (4.2)^3 = (6)^2 h$ $\Rightarrow h = \frac{2744}{100}$ <p>$\therefore h = 2.744 \text{ cm}$</p>	<p>(2)</p> <p>$(1\frac{1}{2})$</p> <p>$(\frac{1}{2})$</p> <p>(2)</p> <p>$(1\frac{1}{2})$</p> <p>$(\frac{1}{2})$</p>												
40.	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Daily Income</th> <th>Number of workers</th> <th>Cumulative Frequency</th> </tr> </thead> <tbody> <tr> <td>400-420</td> <td>12</td> <td>12</td> </tr> <tr> <td>420-440</td> <td>14</td> <td>26</td> </tr> <tr> <td>440-460</td> <td>8</td> <td>34</td> </tr> </tbody> </table>	Daily Income	Number of workers	Cumulative Frequency	400-420	12	12	420-440	14	26	440-460	8	34	
Daily Income	Number of workers	Cumulative Frequency												
400-420	12	12												
420-440	14	26												
440-460	8	34												

		460-480	6	40	
		480-500	10	50	
		Correct Table			(2)
		Drawing an ogive with co-ordinates (420,12), (440,26), (460, 34), (480,40), (500,50)			(2)