SSLC EXAMINATIN MARCH – 2025
MATHEMATICS- ANSWER KEY

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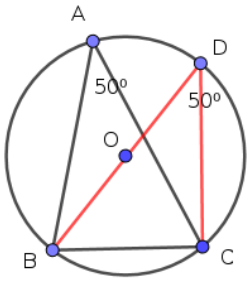
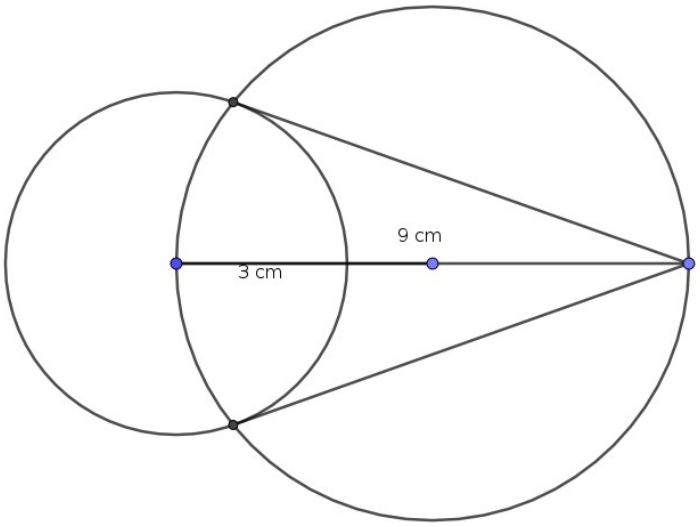
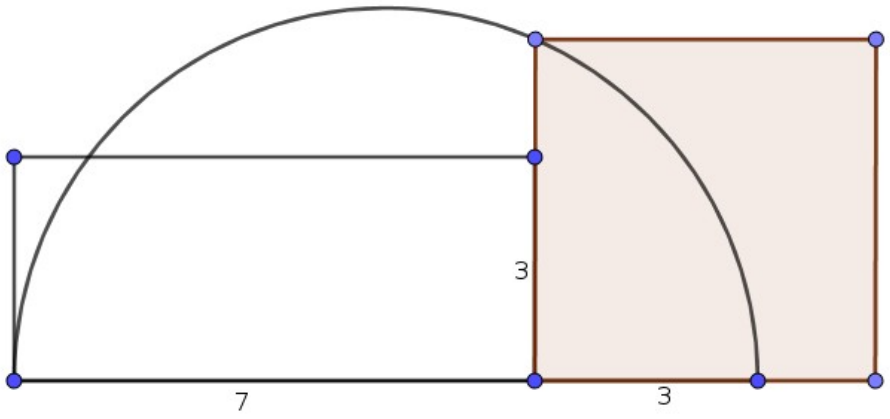
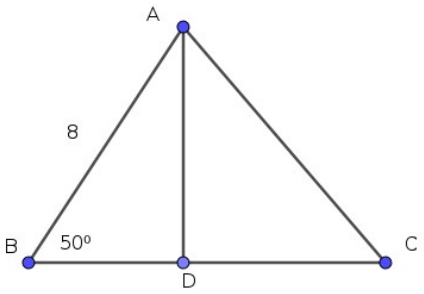
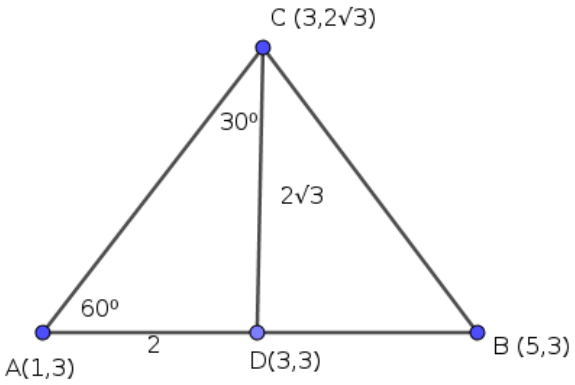
1	a	$\angle AOB = 140^0$	1	2
	b	$\angle ADB = 70^0$	1	
2	a	d = 5	1	2
	b	$X_5 = X_1 + 10d = 3 + 10 \times 5 = 53$	1	
3	a	ആകെ = 20 അഭാജ്യസംഖ്യകൾ - 2,3,5,7,11,13,17,19 അഭാജ്യസംഖ്യ ആകാനുള്ള സാധ്യത = $\frac{8}{20} = \frac{2}{5}$	1	2
	b	പൂർണ്ണവർഗ്ഗ സംഖ്യകൾ - 1,4,9,16 പൂർണ്ണവർഗ്ഗ സംഖ്യ ആകാനുള്ള സാധ്യത = $\frac{4}{20} = \frac{1}{5}$	1	
4		$\angle A = 50^0$ ie $\angle D = 50^0$ Sin D = $\frac{BC}{BD}$ ie Sin 50^0 = $\frac{4}{BD}$ BD = $\frac{4}{\sin 50} = \frac{4}{0.77} = \frac{400}{77}$ = 5.19 cm OR പരിവൃത്ത വ്യാസം = $\frac{a}{\sin A} = \frac{4}{\sin 50} = \frac{4}{0.77} = \frac{400}{77}$ = 5.19 cm 	1 1	2
5	a	$x^2 - 6x = 187$	1	3
	b	$x^2 - 6x + 9 = 187 + 9$ $(x - 3)^2 = 196$ $x - 3 = \sqrt{196} = \pm 14$ x – 3 = 14 ആയാൽ x = 14 + 3 = 17 x – 3 = - 14 ആയാൽ x = - 14 + 3 = – 11 സംഖ്യ = 17	1 1	
6	a	ചരിവ് = $\frac{y2 - y1}{x2 - x1} = \frac{7-5}{3-2} = 2$	1	3
	b	വരയിലെ ഒരു ബിന്ദു (x, y) ആയാൽ ചരിവ് = $\frac{y2 - y1}{x2 - x1}$	1	

		ie 2 = $\frac{y-5}{x-2}$ ie 2(x – 2) = y – 5 2x – 4 = y – 5 Ie 2x – y + 1 = 0	1	
7	a	2	1	3
	b	ആകും .കാരണം 176 നെ 6 കൊണ്ട് ഹരിച്ചാൽ ശിഷ്ടം 2 ആണ്.	2	
8	a	PB = PA – AB = 8 – 3 = 5 cm	1	3
	b	PA x PB = PC x PD 8 x 5 = 10 x PD PD = 4 cm	1 1	
9	a	3 യൂണിറ്റ്	1	
	b	(0,0) , (8,0)	2	3
10			3	3
11	a	1 + 2 + … + 20 = $\frac{20\,x\,21}{2}$ = 210 OR 1 + 2 + … + 20 = $\frac{20}{2}$ (1 + 20) = 10 x 21 = 210	1	4
	b	5 + 10 + … + 100 = 5(1 + 2 + … + 20) = 5 x 210 = 1050 OR 5 + 10 + … + 100 = $\frac{20}{2}$ (5 + 100) = 10 x 105 = 1050	1	
	c	8 + 13 + 18 + … + 103 = (5 + 3) + (10 + 3) + …. + (100 + 3) = (5 + 10 + … + 100) + 20 x 3 = 1050 + 60 = 1110 OR 8 + 13 + 18 + … + 103 = $\frac{20}{2}$ (8 + 103) = 10 x 111 = 1110	1	

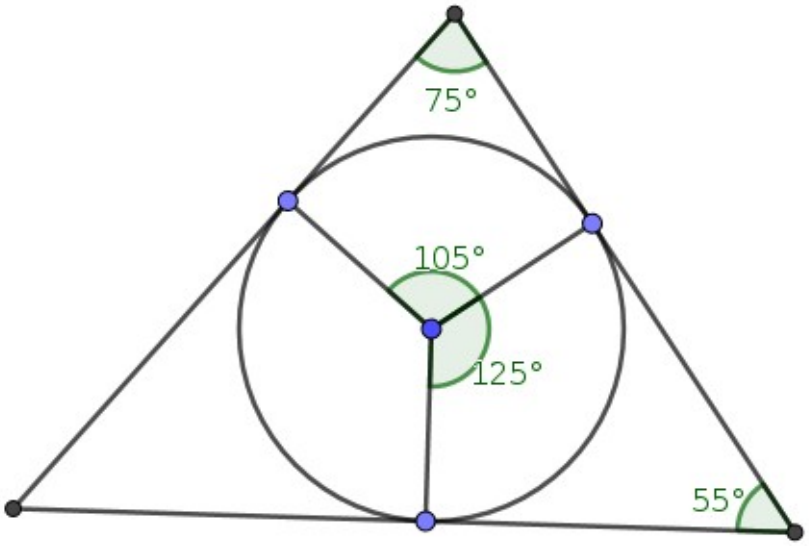
	d	$4 + 9 + 14 + \ldots + 99 = (5 - 1) + (10 - 1) + \ldots + (100 - 1)$ $= (5 + 10 + \ldots + 100) - 20 \times 1 = 1050 - 20 = 1030$ OR $4 + 9 + 14 + \ldots + 99 = \frac{20}{2}(4 + 99) = 10 \times 103 = 1030$	1	
12	a	വീതി = x നീളം = x + 5 കർണ്ണം = x + 10	1	4
	b	$x^2 + (x + 5)^2 = (x + 10)^2$ $x^2 + x^2 + 10x + 25 = x^2 + 20x + 100$ $x^2 - 10x = 75$ $x^2 - 10x + 25 = 75 + 25$ $(x - 5)^2 = 100$ $x - 5 = \sqrt{100}$ $x - 5 = \pm 10$ x – 5 = 10 ആയാൽ x = 10 + 5 = 15 x – 5 = -10 ആയാൽ x = -10 +5 = - 5 ie വീതി = 15m നീളം = 15 + 5 = 20 m	1 1 1	
13	a	$\left(\frac{x1+x2}{2}, \frac{y1+y2}{2}\right) = \left(\frac{3+8}{2}, \frac{2+7}{2}\right) = \left(\frac{11}{2}, \frac{9}{2}\right)$	1	4
	b	$x = x1 + \frac{m}{m+n}(x2 - x1) = 3 + \frac{2}{5}(8 - 3) = 3 + 2 = 5$ $y = y1 + \frac{m}{m+n}(y2 - y1) = 2 + \frac{2}{5}(7 - 2) = 2 + 2 = 4$ ie P (5,4)	1 1 1	
14			4	4

15	a	ലംബദൂരം AD ആയാൽ $\frac{AD}{AB}$ = sin 50 AD = AB x sin 50 = 8 x 0.77 = 6. 16 cm 	1 1	4
	b	പരപ്പളവ് = ½bh = ½ x 10 x 6.16 = 30.8 cm^2	2	
16	a	AB = | 5 – 1 | = 4 unit	1	4
	b	($\frac{x1+x2}{2}$, $\frac{y1+y2}{2}$) = ($\frac{1+5}{2}$, $\frac{3+3}{2}$) = (3, 3)	1	
	c	C(3 , 2 $\sqrt{3}$) 	1 1	
17	a	d1 : d2 = 3 : 2 ie r1 : r2 = 3 : 2	1	4
	b	$\frac{2}{3}\pi r_1^3 : \frac{2}{3}\pi r_2^3 = r_1^3 : r_2^3 = 3^3 : 2^3 = 27 : 8$	1	
	c	27 : 8 = 108 : V V = 32 cm^3	1 1	
18	a	ആകെ മുത്തുകൾ = X ie $\frac{16}{X} = \frac{2}{3}$ ie X = 24	1	4
	b	$\frac{1}{3}$	1	
	c	4 ചുവന്ന മുത്തുകൾ മാറ്റിയാൽ ചുവന്ന മുത്തുകളുടെ എണ്ണം = 12 ആകെ മുത്തുകളുടെ എണ്ണം = 20	1	

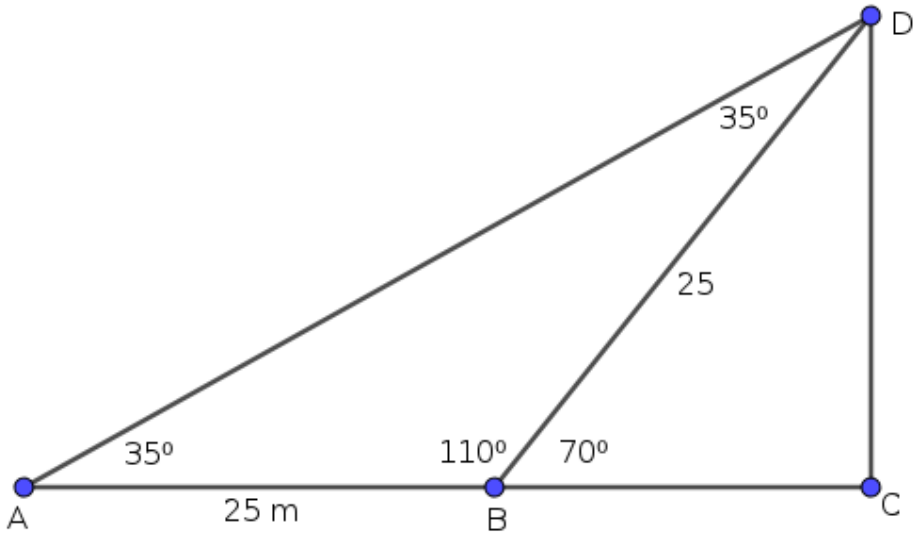
		ചുവന്ന മുത്ത് കിട്ടാനുള്ള സാധ്യത = $\frac{12}{20} = \frac{3}{5}$	1	
19	a	$<PBA = 65^0$	1	4
	b	$<AOB = 130^0$	1	
	c	$<P = 50^0$	1	
	d	$<ACB = 65^0$	1	
20	a	$P(3) = 3^2 - 7 \times 3 + 12 = 0$	1	4
	b	$x - 3$	1	
	c	രണ്ടാമത്തെ ഘടകം = $x - 4$ ie പരിഹാരങ്ങൾ = 3, 4	1 1	
21	a	$l^2 = h^2 + (\frac{a}{2})^2$ $= 8^2 + 6^2 = 64 + 36 = 100$ $l = \sqrt{100} = 10$ m	1 1	4
	b	പാർശ്വമുഖ പരപ്പളവ് = $2al = 2 \times 12 \times 10 = 240\ m^2$ ചെലവ് = $240 \times 340 = 81600$ രൂപ	1 1	
22	a	$x_{16} - x_6 = 10d$ ie $10d = 67 - 27 = 40$ $d = 4$	1	5
	b	$x_1 = x_6 - 5d = 27 - 5 \times 4 = 7$	1	
	c	$Xn = 4n + 3$	1	
	d	$X_{21} = X_{16} + 5d = 67 + 5 \times 4 = 87$ തുക = $\frac{21}{2}(7 + 87) = 987$	1 1	
23	a	$AB = 2\sqrt{3}$ $A(2, 2\sqrt{3})$	1	5
	b	4 unit	1	
	c	$x^2 + y^2 = 16$	1	
	d	$C(-2, -2\sqrt{3})$	2	
24	a	$V1 = \frac{1}{3}\pi r^2 h$ $= \frac{1}{3} \times \pi \times 12^2 \times 18 = 864\pi\ cm^3$		
	b	$V2 = \frac{4}{3}\pi r^3 = \frac{4}{3} \times \pi \times 3^3 = 36\pi\ cm^3$		
	c	എണ്ണം = $\frac{V1}{V2} = \frac{864\pi}{36\pi} = 24$		

<table>
<tr><td>25</td><td>a</td><td>
<table>
<tr><td>ദിവസവേതനം</td><td>തൊഴിലാളികളുടെ എണ്ണം</td><td>ദിവസവേതനം</td><td>തൊഴിലാളികളുടെ എണ്ണം</td></tr>
<tr><td>300 - 400</td><td>11</td><td>400 ൽ താഴെ</td><td>11</td></tr>
<tr><td>400 - 500</td><td>8</td><td>500 ൽ താഴെ</td><td>19</td></tr>
<tr><td>500 - 600</td><td>10</td><td>600 ൽ താഴെ</td><td>29</td></tr>
<tr><td>600 - 700</td><td>13</td><td>700 ൽ താഴെ</td><td>42</td></tr>
<tr><td>700 - 800</td><td>7</td><td>800 ൽ താഴെ</td><td>49</td></tr>
<tr><td>ആകെ</td><td>49</td><td></td><td></td></tr>
</table>
$\frac{49+1}{2}$ = 25 മത്തെ തൊഴിലാളിയുടെ വേതനമാണ് മധ്യമ വേതനം</td><td>1

1</td><td rowspan="3">5</td></tr>
<tr><td>b</td><td>d = $\frac{600-500}{10}$ = 10
$\frac{d}{2}$ = 5
20 മത്തെ തൊഴിലാളിയുടെ വേതനം X_{20} = 500 + 5 = 505</td><td>1

1</td></tr>
<tr><td>c</td><td>മധ്യമ വേതനം $X_{25} = X_{20} + 5d = 505 + 5 \times 10 = 555$</td><td>1</td></tr>
<tr><td>26</td><td></td><td> 
</td><td>5</td><td>5</td></tr>
<tr><td>27</td><td>a</td><td>AB = 15 cm, PA = 12 cm
ie PB = 15 – 12 = 3 cm
PD = 8 cm
PA x PB = PC x PD
12 x 3 = PC x 8
ie PC = 4.5 cm</td><td>1

1</td><td>5</td></tr>
</table>

	b	CD = PC + PD = 4.5 + 8 = 12.5 cm	1	
	c	PM x PN = PA x PB PM x PM = 12 x 3 $PM^2 = 36$ PM = $\sqrt{36}$ = 6 cm ie MN = 2 x PM = 2 x 6 = 12 cm	1 1	
28	a		1	5
	b	$\frac{BC}{BD}$ = cos 70^0 BC = BD x cos 70 = 25 x 0.34 = 8.5 m അകലം = 8.5 m	1 1	
	c	$\frac{CD}{BD}$ = sin 70^0 CD = BD x sin 70 = 25 x 0.94 = 23.5 m ഉയരം = 8.5 m	1 1	
29	a	1		
	b	$\frac{1}{\sin 60} = \frac{1}{\frac{\sqrt{3}}{2}} = \frac{2}{\sqrt{3}}$		
	c	$\frac{1}{\tan 45} = \frac{1}{1} = 1$		
	d	$\frac{1}{\cos 60} - \frac{1}{\sin 30} = \frac{1}{\frac{1}{2}} - \frac{1}{\frac{1}{2}} = 0$		