CCE RR

ಕರ್ನಾಟಕ ಪ್ರೌಢ ಶಿಕ್ಷಣ ಪರೀಕ್ಷಾ ಮಂಡಳಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು – 560 003

KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD, MALLESWARAM, BANGALORE – 560 003

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಪರೀಕ್ಷೆ, ಜೂನ್ — 2015

S. S. L. C. EXAMINATION, JUNE, 2015

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 15. 06. 2015] ಸಂಕೇತ ಸಂಖ್ಯೆ : **81-E**

Date : 15. 06. 2015] **CODE NO. : 81-E**

ವಿಷಯ : ಗಣಿತ

Subject : MATHEMATICS

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Repeater)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಪರಮಾವಧಿ ಅಂಕಗಳು : **80**

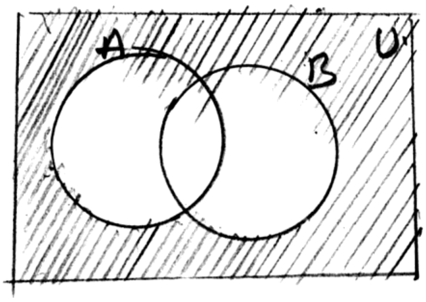
[Max. Marks : 80

Qn. Nos.	Ans. Key	Value Points	Marks allotted
I. 1.	B	72 = (28 × 2) + 16	1
2.	B	10	1
3.	C	1	1
4.	C	Mutually exclusive event	1
5.	D	2·56.	1
6.	D	12	1
7.	A	4 cm	1
8.	A	10 m	1

Qn. Nos.	Value Points		Marks allotted
II.			
9.	$T_n = 2n^2 + 5$		
	$T_3 = 2(3)^2 + 5$ $= 2(9) + 5$	½	
	$= 18 + 5$ $= 23.$	½	1
10.	Degree of the polynomial is 3.		1
11.	$\left(\sqrt{5}+\sqrt{2}\right)\left(\sqrt{5}-\sqrt{2}\right)$	½	
	$= \left(\sqrt{5}\right)^2 - \left(\sqrt{2}\right)^2$		
	$= 5 - 2 = 3$	½	1
12.	$PQOR$ is a square	½	
	$\therefore$ Radius = 8 cm	½	1
13.	$b^2 - 4ac$ OR $\Delta = b^2 - 4ac.$		1
14.	T.S.A. = $2\pi r(r + h)$ Square units OR T.S.A. = $(2\pi r^2 + 2\pi rh)$ Square units		1
III. 15.	If possible, let us suppose $3 + \sqrt{5}$ be a rational number		
	$\Rightarrow$ $3 + \sqrt{5} = \frac{p}{q}$, where $p, q, \in z, \quad q \neq 0$	½	
	$\Rightarrow$ $\sqrt{5} = \frac{p}{q} - 3$	½	
	$\sqrt{5} = \frac{p - 3q}{q}$ which is rational		
	This leads to a contradiction because $\sqrt{5}$ is irrational	½	
	$\therefore$ $3 + \sqrt{5}$ is an irrational number.	½	2

Qn. Nos.	Value Points	Marks allotted

16. (i)

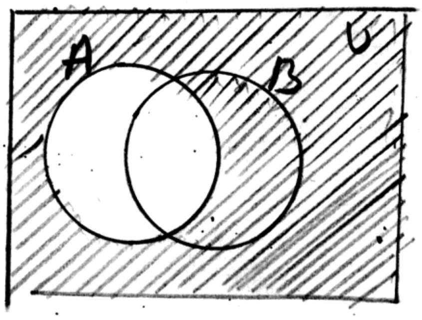


$(A \cup B)'$

Diagram ½

Shading ½

(ii)



$A' \cap B$

Diagram ½

Shading ½

Marks allotted: 2

17. $T_n = \dfrac{1}{a + (n-1)d}$

Common difference $(d) = \dfrac{T_{11} - T_5}{11 - 5}$ ½

$d = \dfrac{15 - 12}{6}$

$d = \dfrac{3}{6}$ ½

$d = \dfrac{1}{2}$

$T_5 = \dfrac{1}{12}$ ½

$a + 4d = 12$

$a + 4 \times \left(\dfrac{1}{2}\right) = 12$

$a = 12 - 2$

$a = 10$

$T_1 = \dfrac{1}{a} = \dfrac{1}{10}.$ ½

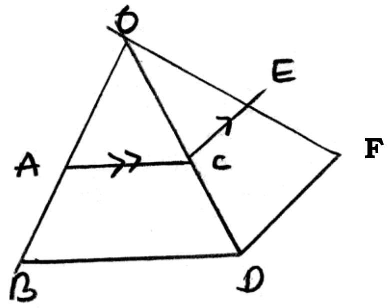
Marks allotted: 2

Qn. Nos.	Value Points		Marks allotted
18.	$n(n-1) = 90$	½	
	$n^2 - n - 90 = 0$		
	$n^2 - 10n + 9n - 90 = 0$	½	
	$n(n-10) + 9(n-10) = 0$		
	$(n-10)(n+9) = 0$	½	
	$n = 10$	½	2
19.	$S = \{1, 2, 3, 4, 5, 6\}$		
	$\therefore \quad n(S) = 6$	½	
	Let A = square number $\{1, 4\}$	½	
	$\therefore \quad n(A) = 2$	½	
	$p(A) = \dfrac{n(A)}{n(S)} = \dfrac{2}{6}$	½	2
20.	$4\sqrt{\dfrac{1}{3}} + \dfrac{1}{2}\sqrt{48}$		
	$= \dfrac{4}{\sqrt{3}} + \dfrac{1}{2}\sqrt{16 \times 3}$	½	
	$= \dfrac{4}{\sqrt{3}} \times \dfrac{\sqrt{3}}{\sqrt{3}} + 2\sqrt{3}$	½	
	$= \dfrac{4\sqrt{3}}{3} + 2\sqrt{3}$		
	$= \dfrac{4\sqrt{3} + 6\sqrt{3}}{3}$	½	
	$= \dfrac{10\sqrt{3}}{3}$	½	2
21.	$a = 1, \quad b = +7, \quad c = 12$	½	
	$x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	½	
	$x = \dfrac{-(+7) \pm \sqrt{(+7)^2 - 4(1)(12)}}{2(1)}$		
	$x = \dfrac{-7 \pm \sqrt{1}}{2}$	½	
	$x = \dfrac{-7+1}{2}$ or $\dfrac{-7-1}{2}$		
	$x = -3$ or $x = -4.$	½	2
	OR		

Qn. Nos.	Value Points		Marks allotted
	$x^2 + 6x = 7$		
	$(x)^2 + 2(x)(3) + 3^2 = 7 + 3^2$	½	
	$(x + 3)^2 = 16$	½	
	$x + 3 = \pm\sqrt{16}$		
	$x + 3 = \pm 4$	½	
	$x = 4 - 3$ or $x = -4 - 3$		
	$x = 1$ or $x = -7$	½	
	OR		
	Alternate method $\left[\frac{1}{2} \times \text{co-eff. } x\right]^2$ is adding.		
	$x^2 + 6x = 7$		
	$x^2 + 6x + \left(\frac{1}{2} \times 6\right)^2 = 7 + \left(\frac{1}{2} \times 6\right)^2$	½	
	$x^2 + 6x + 3^2 = 7 + 3^2$	½	
	$(x + 3)^2 = 16$		
	$x + 3 = \pm 4$	½	
	$x + 3 = 4$ or $x + 3 = -4$		
	$x = 1$ $x = -7$	½	2
22.	Let breadth be x m		
	$\therefore$ Length $= (x + 2)$ m	½	
	Area = Length × breadth		
	$195 = x(x + 2)$		
	$195 = x^2 + 2x$		
	$x^2 + 2x - 195 = 0$	½	
	$x^2 + 15x - 13x - 195 = 0$		
	$x(x + 15) - 13(x + 15) = 0$		
	$x + 15 = 0$ or $x - 13 = 0$		
	$x = -15$ $x = 13.$	½	
	$\therefore$ $x = 13$ m		
	Breadth = 13 m		
	Length = 15 m	½	2

Qn. Nos.	Value Points	Marks allotted

23.



½

In Δ OBD

$AC \mid\mid BD$

$\therefore \quad \frac{OA}{AB} = \frac{OC}{CD}$

$\frac{12}{9} = \frac{8}{CD}$

$\frac{4}{3} = \frac{8}{CD}$ $\qquad CD = 6$ cm ½

In Δ ODF, $\qquad CE \mid\mid DF$

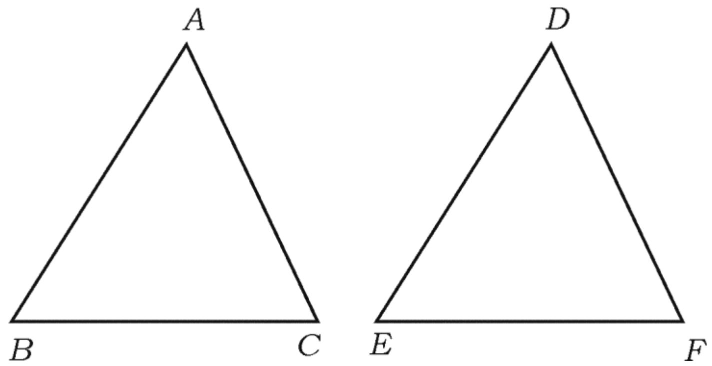
$\therefore \quad \frac{OC}{CD} = \frac{OE}{EF}$ ½

$\frac{8}{6} = \frac{OE}{4 \cdot 5}$

$\frac{4}{3} = \frac{OE}{4 \cdot 5}$ $\qquad \frac{4 \times 4 \cdot 5}{3} = OE$

$\therefore \quad OE = 4 \times 1{\cdot}5 = 6$ cm ½ **2**

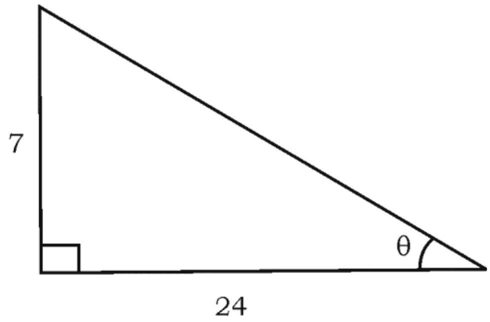
OR

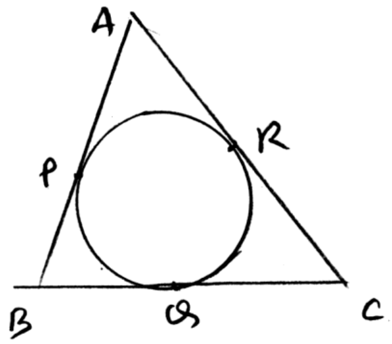


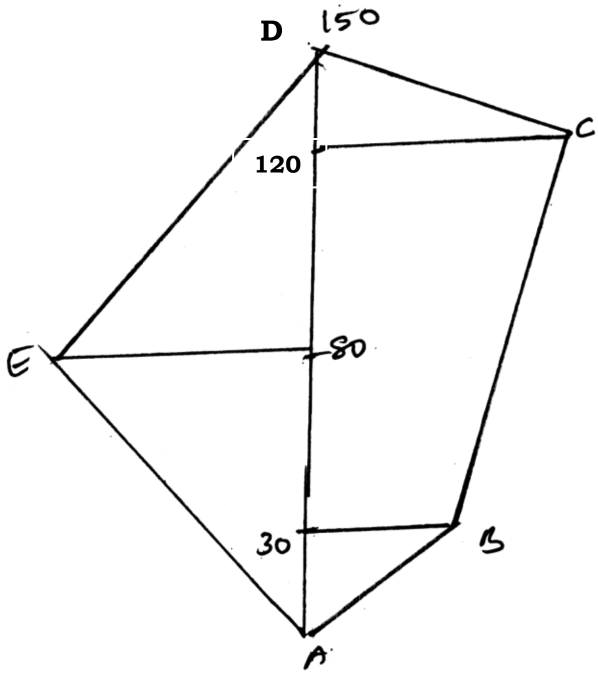
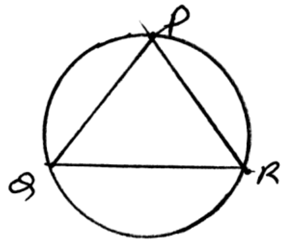
Data : $\Delta\, ABC \mid\mid\mid DEF$ ½ + ½

To prove : $\Delta\, ABC \cong \Delta\, DEF$

Proof : $\frac{\text{Area of triangle } ABC}{\text{Area of triangle } DEF} = \frac{AB^2}{DE^2} = \frac{BC^2}{EF^2} = \frac{CA^2}{DF^2}$ ½

Qn. Nos.	Value Points		Marks allotted
	$1 = \dfrac{AB^2}{DE^2}$		
	$AB^2 = DE^2$		
	$AB = DE$		
	$BC^2 = EF^2$		
	$BC = EF$		
	$CA^2 = DF^2$		
	$CA = DF.$	½	2
24.		½	
	$24 \tan\theta = 7$		
	$\tan\theta = \dfrac{7}{24} = \dfrac{\text{Opp}}{\text{Adj}}$		
	$\text{Hyp} = \sqrt{7^2 + 24^2}$		
	$= \sqrt{49 + 576}$	½	
	$= \sqrt{625}$		
	$= 25$		
	$\therefore$ (i) $\sin\theta = \dfrac{\text{Opp}}{\text{Hyp}} = \dfrac{7}{25}$	½	
	(ii) $\cos\theta = \dfrac{\text{Adj}}{\text{Hyp}} = \dfrac{24}{25}$	½	2
25.	Let m = Slope of the line $= \tan\theta$	½	
	$= \tan 60^\circ$		
	$= \sqrt{3}$	½	
	Equation of a line $y = mx + c$	½	
	$y = \sqrt{3}\,.x + 2$		
	$y = \sqrt{3}\,x + 2.$	½	2

Qn. Nos.	Value Points	Marks allotted
26.	(3, 1) (0, x)	
	x_1 y_1 x_2 y_2	
	By distance formula	
	Distance = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ ½	
	$5 = \sqrt{(0-3)^2 + (x-1)^2}$ ½	
	$5 = \sqrt{9 + (x-1)^2}$	
	$25 = 9 + (x-1)^2$ ½	
	$16 = (x-1)^2$	
	$x - 1 = 4 \quad \therefore \quad x = 5.$ ½	2
27.		
	Given $AB = AC$	
	$AP + BP = AR + RC$ ½	
	$AP + BQ = AP + QC.$ [$\because$ $BP = BQ$, $AR = AP$] ½	
	$BQ = QC$ ½	
	$\therefore$ Q is the mid-point of BC. ½	2
28.	Let r_1 = 15 cm, r_2 = 8 cm and h = 63 cm.	
	Volume of the dustbin (frustum)	
	$= \frac{1}{3}\pi h \left(r_1^2 + r_2^2 + r_1 r_2\right)$ ½	
	$= \frac{1}{3} \times \frac{22}{7} \times 63 \ (15^2 + 8^2 + 120)$ ½	
	= 66 (225 + 64 + 120) ½	
	= 26,994 cubic cm ½	2

Qn. Nos.	Value Points		Marks allotted
29.	20 m = 1 cm		
	30 m = 1·5 cm Scale	½	
	80 m = 4 cm		
	120 m = 6 cm		
	150 m = 7·5 cm		
	60 m = 3 cm		
	40 m = 2 cm.		
		1½	2
30.	$N = 3$, $R = 5$ $A = 6$	½	
	$N + R = 3 + 5 = 8$ …… (i)	½	
	$A + 2 = 6 + 2 = 8$ …… (ii)	½	
	Thus $N + R = A + 2$.	½	
			2

Qn. Nos.	Value Points		Marks allotted
IV. 31.	$\dfrac{{}^{n}C_{r}}{{}^{(n-1)}C_{r-1}} = \dfrac{\dfrac{\lfloor\underline{n}}{\lfloor\underline{n-r} \,.\, \lfloor\underline{r}}}{\dfrac{\lfloor\underline{n-1}}{\lfloor\underline{(n-1)-(r-1)} \,.\, \lfloor\underline{r-1}}}$	1	
	$= \dfrac{\lfloor\underline{n}}{\lfloor\underline{n-r} \,.\, \lfloor\underline{r}} \times \dfrac{\lfloor\underline{(n-1)-(r-1)} \,.\, \lfloor\underline{r-1}}{\lfloor\underline{n-1}}$	½	
	$= \dfrac{\lfloor\underline{n}}{\lfloor\underline{n-r} \,.\, \lfloor\underline{r}} \times \dfrac{\lfloor\underline{n-1-r+1} \;\; \lfloor\underline{r-1}}{\lfloor\underline{n-1}}$	½	
	$= \dfrac{\lfloor\underline{n}}{\lfloor\underline{n-r} \,.\, \lfloor\underline{r}} \times \dfrac{\lfloor\underline{n-r} \,.\, \lfloor\underline{r-1}}{\lfloor\underline{n-1}}$		
	$= \dfrac{n\lfloor\underline{n-1}}{\lfloor\underline{n-r} \,.\, r \,.\, \lfloor\underline{r-1}} \times \dfrac{\lfloor\underline{n-r} \,.\, \lfloor\underline{r-1}}{\lfloor\underline{n-1}}$	½	
	$= \dfrac{n}{r}$.	½	3
	OR		
	Diagnonals of a polygon of n sides $= \dfrac{n(n-3)}{2}$	½	
	$44 = \dfrac{n(n-3)}{2}$	½	
	$88 = n^2 - 3n$ $n^2 - 3n - 88 = 0$ $n^2 - 11n + 8n - 88 = 0$	1	
	$n(n-11) + 8(n-11) = 0$		
	$n = 11 \qquad n = -8$	½	
	$\therefore \quad n = 11$ Number of sides $= 11$.	½	3

Qn. Nos.	Value Points	Marks allotted

32. $A = 25$

C.I.	*f*	*Mid-point x*	$d = x - A$	d^2	*fd*	$f d^2$
0 – 10	7	5	– 20	400	– 140	2800
10 – 20	10	15	– 10	100	– 100	1000
20 – 30	15	25	0	0	0	0
30 – 40	8	35	+ 10	100	80	800
40 – 50	10	45	+ 20	400	200	4000

$N = 50$ $\sum fd = 40$ $\sum f d^2 = 8600$ 1½

Standard deviation $\sigma = \sqrt{\frac{\Sigma fd^2}{N} - \left(\frac{\Sigma fd}{N}\right)^2}$ ½

$= \sqrt{\frac{8600}{50} - \left(\frac{40}{50}\right)^2}$ ½

$= \sqrt{172 - 0\cdot64}$

$= \sqrt{171\cdot36}$

$= 13\cdot1.$ ½ 3

33. $P(x) = ax^3 + 3x^2 - 13$

Put $x = 3$

$P(3) = a(3)^3 + 3(3)^2 - 13$

$= 27a + 27 - 13$

$= 27a + 14$ ..... (i) 1

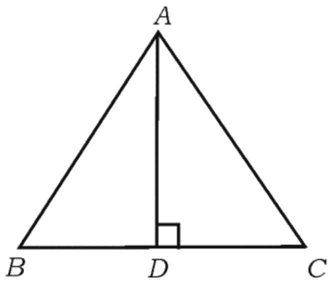
$g(x) = 2x^3 - 4x + a$

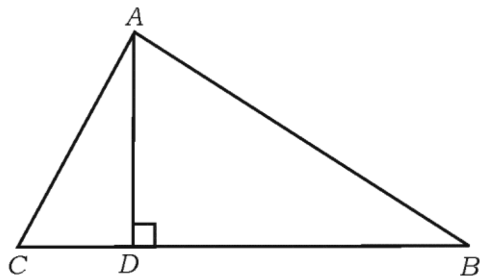
Put $x = 3$

$g(3) = 2(3)^3 - 4(3) + a$

$= 54 - 12 + a$ 1

$= 42 + a.$ ..... (ii)

Qn. Nos.	Value Points		Marks allotted
	Remainders of $P(x)$ and $g(x)$ are same		
	$\therefore \quad 27a + 14 = 42 + a$ from (i) and (ii)		
	$26a = 28$	½	
	$a = \frac{28}{26}$		
	$a = \frac{14}{13}$.	½	3
	OR		
	Put $x = -4$		
	$\begin{array}{r\|rrrrr} -4 & 1 & 10 & 35 & 50 & 29 \\ \hline & 0 & -4 & -24 & -44 & -24 \\ \hline & 1 & 6 & 11 & 6 & 5 \end{array}$	1½	
	$\therefore \quad$ Quotient $= x^3 + 6x^2 + 11x + 6$		
	Given :		
	$x^3 + 6x^2 + 11x + 6 = x^3 - ax^2 + bx + 6$		
	$\therefore \quad -a = 6 \qquad b = 11$	½ + ½	
	$a = -6$	½	
	Remainder = 5.		3
34.		Figure — ½	
	In ΔADB		
	$AB^2 = AD^2 + BD^2$ .... (i)		
	In ΔADC		
	$AC^2 = AD^2 + CD^2$ .... (ii)	½	
	Subtract (ii) from (i)		
	$AB^2 - AC^2 = BD^2 - CD^2$	½	
	$AB^2 + CD^2 = BD^2 + AC^2$		

Qn. Nos.	Value Points	Marks allotted
	$AB^2 + CD^2 = \left(\frac{1}{2}BC\right)^2 + AC^2$ $\quad\because\ BD = \frac{1}{2}BC$ ½	
	$AB^2 + CD^2 = \frac{BC^2}{4} + AC^2$ ½	
	$AB^2 + CD^2 = \frac{AC^2}{4} + AC^2$ $\quad[\because\ BC = AC]$	
	$= \frac{5AC^2}{4}.$ ½	3
	OR	
	 Figure — ½	
	$BC = CD + BD$	
	$BC = CD + 3CD$	
	$BC = 4CD$	
	$CD = \frac{BC}{4}$ ½	
	In $\Delta\ ABD$,	
	$AB^2 = AD^2 + BD^2$ .... (i)	
	In $\Delta\ ACD$, $AC^2 = AD^2 + CD^2$ .... (ii) ½	
	Subtract (ii) from (i)	
	$AB^2 - AC^2 = BD^2 - CD^2$	
	$AB^2 - AC^2 = (3CD)^2 - CD^2$ $\quad\left[\because\ \frac{BD}{CD} = \frac{3}{1}\right]$ ½	
	$= 9CD^2 - CD^2$	
	$= 8CD^2$	
	$= 8\left(\frac{BC}{4}\right)^2$	

Qn. Nos.	Value Points	Marks allotted
	$AB^2 - AC^2 = 8\left(\dfrac{BC^2}{16}\right)$ ½	
	$AB^2 - AC^2 = \dfrac{BC^2}{2}$	
	$\therefore \quad 2\left(AB^2 - AC^2\right) = BC^2$ ½	3
35.	LHS :	
	$(\sin\theta + \operatorname{cosec}\theta)^2 + (\cos\theta + \sec\theta)^2$	
	$= \sin^2\theta + \operatorname{cosec}^2\theta + 2\sin\theta \cdot \operatorname{cosec}\theta + \cos^2\theta + \sec^2\theta + 2\cos\theta \cdot \sec\theta$ ½	
	$= \sin^2\theta + \operatorname{cosec}^2\theta + 2(1) + \cos^2\theta + \sec^2\theta + 2(1)$ ½	
	$= \sin^2\theta + \cos^2\theta + \operatorname{cosec}^2\theta + \sec^2\theta + 4$ ½	
	$= 1 + \operatorname{cosec}^2\theta + \sec^2\theta + 4$ ½	
	$= 5 + 1 + \cot^2\theta + 1 + \tan^2\theta$ ½	
	$= 7 + \tan^2\theta + \cot^2\theta$ = RHS. ½	3
	OR	
	LHS $= \sqrt{\dfrac{1+\cos\theta}{1-\cos\theta}}$	
	$= \sqrt{\dfrac{1+\cos\theta}{1-\cos\theta} \times \dfrac{1+\cos\theta}{1+\cos\theta}}$ ½	
	$= \sqrt{\dfrac{(1+\cos\theta)^2}{1-\cos^2\theta}}$ ½	
	$= \sqrt{\dfrac{(1+\cos\theta)^2}{1-\cos^2\theta}}$ ½	
	$= \dfrac{1+\cos\theta}{\sin\theta}$ ½	
	$= \dfrac{1}{\sin\theta} + \dfrac{\cos\theta}{\sin\theta}$ ½	
	$= \operatorname{cosec}\theta + \cot\theta$ = RHS. ½	3

Qn. Nos.	Value Points	Marks allotted

36.

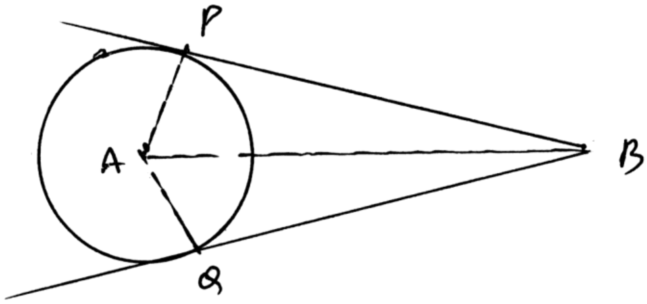


Figure — ½

Data : A is the centre of the circle

B is the external point

BP and BQ are the tangents. ½

To prove : $BP = BQ$

Construction : AP, AQ and AB are joined. ½

Proof : In $\Delta\, APB$ and $\Delta\, AQB$ ½

$AP = AQ$ (radii of the same circle)

(radius drawn at the point of contact of the tangent)

$\angle APB = \angle AQB = 90°$ ½

$AB = AB$

$\therefore\ \Delta\, APB \cong \Delta\, AQB$ [RHS theorem] ½

$\therefore\ BP = BQ.$ 3

V. 37.

Let the terms be $\frac{a}{r}$, a, ar ½

Given : Product = 216

$$\frac{a}{r} \cdot a \cdot ar = 216$$ ½

$$a^3 = 216$$

$$a = 6.$$ ½

And

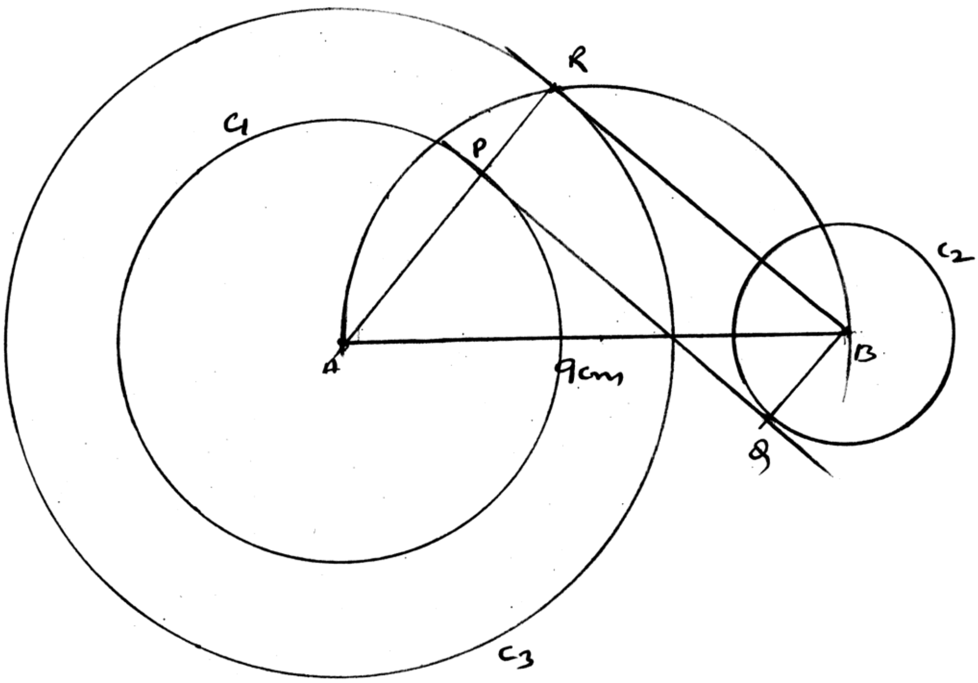
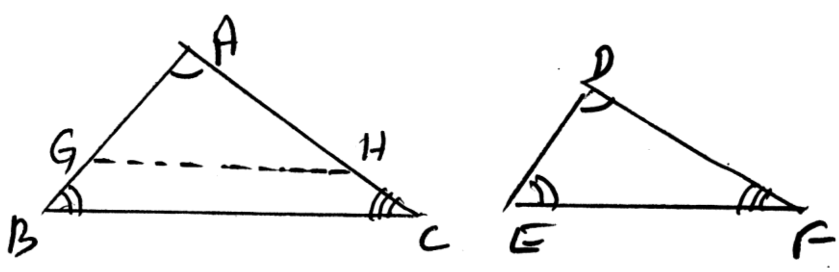
$$\left(\frac{a}{r} \times a\right) + (a \times ar) + \left(\frac{a}{r} \times ar\right) = 156$$ ½

$$\frac{a^2}{r} + a^2 r + a^2 = 156$$

$$\frac{36}{r} + 36r + 36 = 156$$

$$\frac{36}{r} + 36r = 156 - 36$$ ½

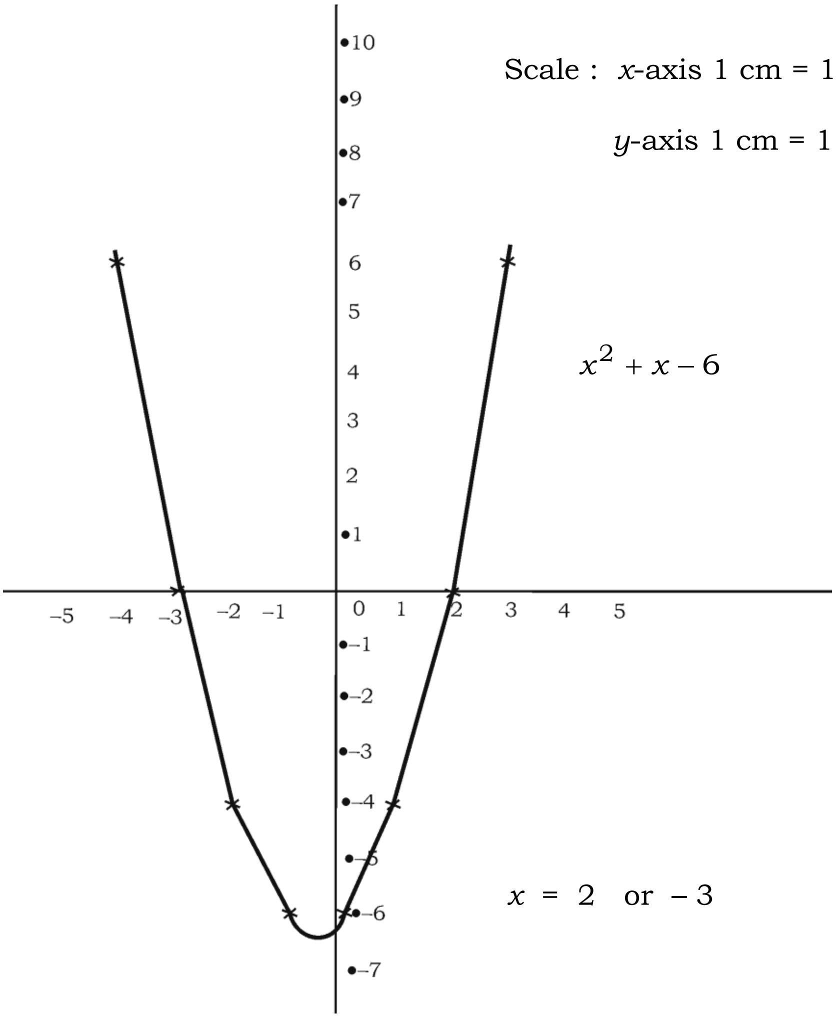
Qn. Nos.	Value Points		Marks allotted
	$\dfrac{36 + 36r^2}{r} = 120$		
	$36r^2 + 36 = 120r$		
	$36r^2 - 120r + 36 = 0$	½	
	$3r^2 - 10r + 3 = 0$		
	$3r^2 - 9r - 1r + 3 = 0$		
	$3r(r - 3) - 1(r - 3) = 0$		
	$(r - 3)\ (3r - 1) = 0$		
	$r = 3$ or $r = \frac{1}{3}$	½	
	The terms of the progression are		
	2, 6, 18 or 18, 6, 2.	½	4
	OR		
	Let the terms be $a - d,\ a,\ a + d$.		
	Given : $a - d + a + a + d = 18$	½	
	$3a = 18 \quad \therefore \quad a = 6$	½	
	And		
	$(a - d)^2 + a^2 + (a + d)^2 = 140$		
	$(6 - d)^2 + 36 + (6 + d)^2 = 140$	½	
	$(6 - d)^2 + (6 + d)^2 = 140 - 36$		
	$36 + d^2 - 12d + 36 + d^2 + 12d = 104$	½	
	$2d^2 + 72 = 104$		
	$2d^2 = 104 - 72$	½	
	$2d^2 = 32$		
	$d^2 = 16$	½	
	$\therefore \quad d = \pm 4.$		
	If $d = 4$ then terms are		
	$6 - 4,\ 6,\ 6 + 4$	½	
	i.e. 2, 6, 10		
	If $d = -4$, then terms are		
	$6 - (-4),\ 6,\ 6 - 4$	½	
	10, 6, 2.		4

Qn. Nos.	Value Points	Marks allotted
38.		
	By measuring $PQ = 6{\cdot}7$ cm	
	To draw C_1, C_2 and C_3 circles — $1\frac{1}{2}$	
	To bisect AB and to draw semicircle — 1	
	Joining AR, BR and PQ — 1	
	Measuring $PQ = 6{\cdot}7$ cm — $\frac{1}{2}$	4
39.	 ½	
	Data : In ΔABC and ΔDEF	
	$\angle BAC = \angle EDF$	
	$\angle ABC = \angle DEF$ ½	

Qn. Nos.	Value Points	Marks allotted
	To prove that : $\frac{AB}{DE} = \frac{BC}{EF} = \frac{CA}{FD}$ ½	
	Construction : Mark points G and H on AB and AC such that	
	$AG = DE$ and $AH = DF$. Join G and H. ½	
	Proof : Compare $\Delta\, AGH$ and $\Delta\, DEF$	
	$AG = DE$ [$\because$ construction]	
	$\angle GAH = \angle EDF$ [$\because$ data]	
	$AH = DF$ [$\because$ construction] ½	
	$\therefore$ $\Delta\, AGH \cong \Delta\, DEF$ [$\because$ SAS]	
	$\angle AGH = \angle DEF$ [CPCT]	
	But $\angle ABC = \angle DEF$ [$\because$ data] ½	
	$\Rightarrow$ $\angle AGH = \angle ABC$ [$\because$ Axiom 1]	
	$GH \parallel BC$	
	(If corresponding angles are equal then lines are parallel) ½	
	$\therefore$ In $\Delta\, ABC$, $\frac{AB}{AG} = \frac{BC}{GH} = \frac{CA}{HA}$ (Corollary to Thales)	
	Hence $\frac{AB}{DE} = \frac{BC}{EF} = \frac{CA}{FD}$ [$\because$ $\Delta\, AGH \cong \Delta\, DEF$] ½	4

Qn. Nos.	Value Points	Marks allotted
40.	$y = x^2 + x - 6$	

x	0	1	– 1	2	– 2	3	– 3	– 4
y	– 6	– 4	– 6	0	– 4	6	0	6



Scale : x-axis 1 cm = 1 unit

y-axis 1 cm = 1 unit

$x = 2$ or -3

4