KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

PROVINCIAL STANDARDISED ASSESSEMENT

GRADE 12

MATHEMATICS P2

SEPTEMBER 2026

PREPARATORY EXAMINATION

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 15 pages.

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QUESTION 1

1.1	$\bar{x} = \frac{107}{10}$ $= 10,7$ Answer only: Full marks	✓A $\bar{x} = \frac{107}{10}$ ✓CA answer (2)
1.2	$a = 49,51$ $b = 2,62$ $\hat{y} = 49,51 + 2,62x$	✓A value of a ✓A value of b ✓CA equation (3)
1.3	$r = 0,96$ Penalty for incorrect rounding: Only in this question.	✓A answer (1)
1.4	There is a very strong correlation between gym hours and maximum performance minutes.	✓CA very strong (1)
1.5	$\hat{y} = 49,51 + 2,62(4)$ $= 59,99$ minutes **OR** 59,97 minutes (from calculator)	✓CA substitution ✓CA answer (2) **OR** ✓✓A A answer (2)
1.6	Increase	✓A answer (1)
		[10]

QUESTION 2

2.1	200	✓A answer (1)
2.2.1	R3920	✓A answer (accept: R3850 – R4000) (1)
2.2.2	No. of Bolt vehicles for which fares are R5000 or less = 153 No of Bolt vehicles for which fares are more than R5000 $= 200 - 153$ $= 47$	✓A 153 (accept: 150 155) ✓CA subtraction ✓CA answer (accept: 45 – 50) (3)
2.3	20% of $200 = 40$ Reading from the graph this equates to R2425 in fares. distance travelled $= \frac{2425}{25}$ $= 97$ km $\therefore x = 97$	✓A 40 ✓CA amount in fares (accept: R2400 – R2450) ✓CA dividing amount by 25 ✓CA answer (accept: 96 to 98 km) (4)
		[9]

QUESTION 3

3.1.1	Midpoint of EH $=\left(\frac{-2+2}{2};\frac{-3+0}{2}\right)$ $=\left(0;\frac{-3}{2}\right)$ Answer only: Full marks	✓A x-value ✓A y-value (2)
3.1.2	$m_{EF}=\frac{-5-(-3)}{2-(-2)}$ $=\frac{-1}{2}$ Answer only: Full marks	✓A substitution ✓CA answer (2)
3.1.3	$m_{DG}=m_{EF}=\frac{-1}{2}$ [DG ∥ EF] $y=mx+c$ Substitute $(2;0)$: $0=\left(\frac{-1}{2}\right)(2)+c$ $c=1$ $\therefore y=\frac{-1}{2}x+1$	✓CA $m_{DG}=\frac{-1}{2}$ ✓CA substitution ✓CA answer (3)
3.1.4	$m_{DG}=\tan D\hat{H}C=-\frac{1}{2}$ $D\hat{H}C=153,43°$ $\alpha=180°-153,43°=26,57°$ [∠s on a straight line] $\theta=90°+26,57°=116,57°$ [ext ∠ of ΔDOH]	✓CA $\tan D\hat{H}C=-\frac{1}{2}$ ✓CA size of $D\hat{H}C$ ✓CA size of θ (3)
3.2	$D(0;1)$ $m_{DE}=\frac{-3-1}{-2-0}=2$ $m_{DE}\times m_{DG}=2\times-\frac{1}{2}=-1$ $\therefore DE\perp DG$	✓CA coordinates of D ✓CA $m_{DE}=2$ ✓A showing that product of gradients $=-1$ (3)
3.3.1	$\left(0;\frac{-3}{2}\right)$	✓CA answer (1)

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3.3.2	$(x-0)^2+\left[y-\left(-\frac{3}{2}\right)\right]^2=r^2$ $x^2+\left(y+\frac{3}{2}\right)^2=r^2$ $r^2=(2-0)^2+\left[0-\left(-\frac{3}{2}\right)\right]^2$ $=4+\frac{9}{4}=\frac{25}{4}$ $\therefore x^2+\left(y+\frac{3}{2}\right)^2=\frac{25}{4}$ Answer only: 3/4	✓CA substitution of coordinates of centre ✓CA substitution of $H(2\,;0)$ ✓CA value of r^2 ✓CA equation of circle (4)
		[18]

QUESTION 4

4.1	$(x-4)^2+(y-6)^2=10^2$ $(-4-4)^2+(p-6)^2=10^2$ $(p-6)^2=36$ $p-6=\pm\sqrt{36}$ **OR** $p^2-12p+36=36$ $p-6=6$ or $p-6=-6$ $p(p-12)=0$ $p=12$ or $p\neq 0$ $p=12$ or $p\neq 0$ $\therefore p=12$ $\therefore p=12$	✓A equation of the circle/distance formula ✓CA substitution of point J ✓CA simplification ✓A $p-6=\pm\sqrt{36}$ **OR** $p(p-12)=0$ (4)
4.2.1	$C(4\,;6-10)$ $\therefore C(4\,;-4)$ Answer only: Full marks	✓A x-coordinate ✓A y-coordinate (2)
4.2.2	$m_{MJ}=\frac{12-6}{-4-4}=-\frac{3}{4}$ $\therefore m_{AJB}=\frac{4}{3}$ [radius ⊥ tangent] $y=\frac{4}{3}x+c$ Subst. point J: $12=\frac{4}{3}(-4)+c$ $c=\frac{52}{3}$ $y=\frac{4}{3}x+\frac{52}{3}$	✓A gradient of radius ✓CA gradient of tangent ✓CA substitution of gradient and point J ✓CA equation of tangent (4)

4.2.3	$y_A = \frac{4}{3}(4) + \frac{52}{3} = \frac{68}{3}$	✓CA calculation of y_A
	$AC = y_A - y_C = \frac{68}{3} - (-4) = \frac{80}{3}$	✓CA length of AC
	Calculate x-coordinate of B:	
	$\frac{x_B + 4}{2} = -9$	✓CA calculation of x_B
	$\therefore x_B = -22$	✓CA value of x-coordinate of B
	height of $\Delta ABC \perp AC = 4 - (-22) = 26$ units	✓CA height of ΔABC
	$\therefore$ Area of $\Delta ABC = \frac{1}{2} \times \text{base} \times \text{height}$	
	$= \frac{1}{2} \times \frac{80}{3} \times 26$	✓CA substitution into area formula
	$= \frac{1040}{3} = 346,67 \text{ units}^2$	✓CA answer (7)
	OR	**OR**
	Coordinates of A:	
	$y_A = \frac{4}{3}(4) + \frac{52}{3} = \frac{68}{3}$	✓CA calculation of y_A
	$AC = y_A - y_C = \frac{68}{3} - (-4) = \frac{80}{3}$	✓CA length of AC
	Coordinates of B:	
	$\frac{x_B + 4}{2} = -9$ $\quad\quad$ $\frac{-4 + y_B}{2} = -8$	
	$\therefore x_B = -22$ $\quad\quad$ $\therefore y_B = -12$	
	$\therefore B(-22;-12)$	✓CA values of coordinates of B
	Length of AB $= \sqrt{(-22-4)^2 + \left(-12 - \frac{68}{3}\right)^2} = \frac{130}{3}$	✓CA length of AB
	$\tan^{-1}\left(\frac{4}{3}\right) = 53,13°$	
	$\therefore \hat{A} = 180° - 90° - 53,13° = 36,87°$	✓CA size of $\hat{A}$
	$\therefore$ Area of $\Delta ABC = \frac{1}{2} AB.AC \sin A$	
	$= \frac{1}{2}\left(\frac{130}{3}\right)\left(\frac{80}{3}\right)\sin 36,87°$	✓CA substitution into area formula
	$= 346,67 \text{ units}^2$	✓CA answer (7)

4.3	For circles touching externally. the distance between centres: $d = r_1 + r_2$ $(4-4)^2 + (6-n)^2 = (10+10)^2$ $36 - 12n + n^2 = 400$ $n^2 - 12n - 364 = 0$ $(n+14)(n-26) = 0$ $\therefore n = -14 \quad \text{or} \quad n = 26$ **OR** $n = 6-2(r)$ or $n = 6+2(r)$ $= 6-2(10)$ $= 6+2(10)$ $= -14$ $= 26$	✓A $d = r_1 + r_2$ ✓A substitution ✓A $n = -14$ ✓A $n = 26$ (4) **OR** ✓A $n = 6-2(r)$ ✓A $n = 6+2(r)$ ✓A $n = -14$ ✓A $n = 26$ (4)
		[21]

QUESTION 5

5.1.1	$x = -3\ ;\ y = -\sqrt{7}$ $(-3)^2 + \left(-\sqrt{7}\right)^2 = r^2$ [Pythagoras] $r^2 = 16$ $r = 4$ $\therefore \cos\alpha = \frac{-3}{4}$	✓A substitution ✓CA value of r ✓CA answer (3)
5.1.2	$\sin 3\alpha \cos 2\alpha - \cos 3\alpha \sin 2\alpha$ $= \sin(3\alpha - 2\alpha)$ $= \sin\alpha$ $= \frac{-\sqrt{7}}{4}$	✓A $\sin\alpha$ ✓CA answer (2)
5.2	$\frac{\sin 290°.\sin(90°+x).\sin 160°}{\cos(-x-360°).\sin 220°}$ $= \frac{(-\sin 70°).(\cos x).\sin 20°}{\cos x.(-\sin 40°)}$ $= \frac{-\cos 20°.\sin 20°}{-\sin 40°}$ $= \frac{\sin 20°\cos 20°}{2\sin 20°\cos 20°}$ $= \frac{1}{2}$	✓A $-\sin 70°$ and $\sin 20°$ ✓A $\cos x$ (in numerator) ✓A $\cos x$ (in denominator) ✓A $-\sin 40°$ ✓CA $\sin 70° = \cos 20°$ ✓CA double angle expansion ✓CA answer (7)

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5.3.1	$\dfrac{\frac{1}{4}-\cos(\theta-60°).\cos(\theta+60°)}{\sin 2\theta}$	
	$=\dfrac{\frac{1}{4}-\left[(\cos\theta\cos 60°+\sin\theta\sin 60°)(\cos\theta\cos 60°-\sin\theta\sin 60°)\right]}{2\sin\theta\cos\theta}$	✓A compound ∠ expansions ✓A double ∠ expansion
	$=\dfrac{\frac{1}{4}-\left[\cos^2\theta\cos^2 60°-\sin^2\theta\sin^2 60°\right]}{2\sin\theta\cos\theta}$	✓A simplifying numerator
	$=\dfrac{\frac{1}{4}-\cos^2\theta\left(\frac{1}{2}\right)^2+\sin^2\theta\left(\frac{\sqrt{3}}{2}\right)^2}{2\sin\theta\cos\theta}$	✓A special angle values
	$=\dfrac{\frac{1}{4}-\frac{1}{4}\cos^2\theta+\frac{3}{4}\sin^2\theta}{2\sin\theta\cos\theta}$	
	$=\dfrac{\frac{1}{4}\left(1-\cos^2\theta\right)+\frac{3}{4}\sin^2\theta}{2\sin\theta\cos\theta}$	✓A common factor
	$=\dfrac{\frac{1}{4}\sin^2\theta+\frac{3}{4}\sin^2\theta}{2\sin\theta\cos\theta}$	✓A using square identity
	$=\dfrac{\sin^2\theta}{2\sin\theta\cos\theta}$	✓A $\dfrac{\sin^2\theta}{2\sin\theta\cos\theta}$
	$=\frac{1}{2}\tan\theta$	
	$=$ RHS	(7)
5.3.2	Undefined at $\theta=90°$, because $\tan 90°$ is undefined. Also undefined when $\sin 2\theta=0$ $2\theta=0°+k.180°$ $\therefore\theta=0°+k.90°$ Therefore, in the interval $\theta\in[0°;180°]$, the identity is undefined at: $\theta=0°;90°;180°$.	✓A $0°$ ✓A $90°$ ✓A $180°$ (3)
		[22]

QUESTION 6

6.1.1	$A(\overline{210^\circ ; -1})$	✓A 210°; ✓A -1 (2)
6.1.2	$\sin(2x-60^\circ)=1$ $2x-60^\circ=90$ $2x=150^\circ$ $x=75^\circ$ $\therefore B(75^\circ ; 1)$ **OR** $y=\sin(2x-60^\circ)=\sin 2(x-30^\circ)$ The graph of $y=\sin 2(x-30^\circ)$ is obtained by translating the graph of $y=\sin 2x$ to the right by 30°. $y=\sin 2x$ has a maximum turning point at $x=45^\circ$. Therefore, the graph of $y=\sin(2x-60^\circ)$ will have a maximum turning point at $x=45^\circ+30^\circ=75^\circ$. Therefore, the coordinates of B will be $(75^\circ ; 1)$.	✓A setting up equation ✓A x-coordinate ✓A y-coordinate (3) **OR** ✓A translation of 30° to the right ✓A x-coordinate ✓A y-coordinate (3)
6.2	360°	✓A answer (1)
6.3	Range of $y=\cos(x-30^\circ)$ is $-1\le y\le 1$ $\therefore$ Range of $y=2^{\cos(x-30^\circ)}$ is $\frac{1}{2}\le y\le 2$ Answer only: Full marks	✓A range of $\cos(x-30^\circ)$ ✓✓CA CA answer (3)
6.4.1	$\frac{1}{2}\sin 2x-\frac{\sqrt{3}}{2}\cos 2x=\cos(x-30^\circ)$ $\sin 2x\cos 60^\circ-\cos 2x\sin 60^\circ=\cos(x-30^\circ)$ $\sin(2x-60^\circ)=\cos(x-30^\circ)$ $\sin(2x-60^\circ)=\sin(90-(x-30^\circ))$ $\sin(2x-60^\circ)=\sin(120^\circ-x)$ $2x-60^\circ=120^\circ-x+k.360^\circ$ or $2x-60^\circ=180^\circ-(120^\circ-x)+k.360^\circ$ $3x=180^\circ+k.360^\circ$ $x=120^\circ+k.360^\circ,\ k\in Z$ $x=60^\circ+k.120^\circ,\ k\in Z$ $k\in Z$: at least once. **OR**	✓A special angles ✓A compound angle identity used ✓CA co-ratio ✓CA both equations ✓CA $x=120^\circ+k.360^\circ$ ✓CA $x=60^\circ+k.120^\circ$ (6) **OR**

	$\frac{1}{2}\sin 2x-\frac{\sqrt{3}}{2}\cos 2x=\cos(x-30°)$ $\sin 30°\sin 2x-\cos 30°\cos 2x=\cos(x-30°)$ $-(\cos 30°\cos 2x-\sin 30°\sin 2x)=\cos(x-30°)$ $-\cos(2x+30°)=\cos(x-30°)$ $2x+30°=180°-(x-30°)+k.360°$ or $2x+30°=180°+(x-30°)+k.360°$ $3x=180°+k.360°$ or $x=120°+k.360°,\ k\in Z$ $x=60°+k.120°,\ k\in Z$ **OR** $\frac{1}{2}\sin 2x-\frac{\sqrt{3}}{2}\cos 2x=\cos(x-30°)$ $\cos 60°\sin 2x-\sin 60°\cos 2x=\cos(x-30°)$ $\sin 2x\cos 60°-\cos 2x\sin 60°=\cos(x-30°)$ $\sin(2x-60°)=\cos(x-30°)$ $\sin 2(x-30°)=\cos(x-30°)$ $2\sin(x-30°)\cos(x-30°)=\cos(x-30°)$ $\cos(x-30°)[2\sin(x-30°)-1]=0$ $\cos(x-30°)=0$ or $\sin(x-30°)=\frac{1}{2}$ $x-30°=90°+k.180°$ or $x-30°=30°+k.360°$ or $x-30°=150°+k.360°$ $x=120°+k.180°\ k\in Z$ $x=60°+k.360°,\ k\in Z$ $x=180°+k.360°,\ k\in Z$	✓A special angles ✓A compound angle identity used ✓CA co-ratio ✓CA both equations ✓CA $x=120°+k.360°$ ✓CA $x=60°+k.120°$ (6) **OR** ✓A special angles ✓A compound angle identity used ✓CA factorisation ✓CA all 3 equations ✓CA $x=120°+k.180°$ ✓CA $x=60°+k.360°$ and $x=180°+k.360°$ (6)
6.4.2	$60°$	✓CA answer (1)
		[16]

QUESTION 7

7.1	In ΔABC: $\frac{AB}{r} = \tan 2\theta$ $\therefore AB = r\tan 2\theta$ In ΔABD: $\frac{AB}{R} = \tan\theta$ $\therefore AB = R\tan\theta$ $\therefore r\tan 2\theta = R\tan\theta$ $R = \frac{r\tan 2\theta}{\tan\theta}$ $= \frac{(r)\frac{\sin 2\theta}{\cos 2\theta}}{\frac{\sin\theta}{\cos\theta}}$ $= \left(\frac{r.2\sin\theta\cos\theta}{2\cos^2\theta - 1}\right) \times \frac{\cos\theta}{\sin\theta}$ $= \frac{2r\cos^2\theta}{2\cos^2\theta - 1}$	✓A $\frac{AB}{r} = \tan 2\theta$ ✓A $\frac{AB}{R} = \tan\theta$ ✓A equating ✓A quotient identity ✓A double angle expansion ✓A double angle expansion (6)
7.2	$BD = \frac{2r\cos^2\theta}{2\cos^2\theta - 1} = \frac{2(2)\cos^2 30°}{2\cos^2 30° - 1} = 6$ m In ΔBCD: $CD^2 = BD^2 + BC^2 - 2BD.BC.\cos C\hat{B}D$ $7^2 = 6^2 + 2^2 - 2(6)(2)\cos C\hat{B}D$ $\cos C\hat{B}D = -\frac{9}{24}$ $C\hat{B}D = 112,02°$ Area of $\Delta BCD = \frac{1}{2}.BC.BD.\sin C\hat{B}D$ $= \frac{1}{2}(2)(6)\sin 112,02°$ $= 5,6$ m^2 **OR**	✓A length of BD ✓CA substitution into cosine rule ✓CA value of $\cos C\hat{B}D$ ✓CA size of $C\hat{B}D$ ✓CA substitution into area rule ✓CA answer (6) **OR**

	$\text{BD} = \dfrac{2r\cos^2\theta}{2\cos^2\theta - 1} = \dfrac{2(2)\cos^2 30°}{2\cos^2 30° - 1} = 6 \text{ m}$	✓A length of BD
	In ΔBCD: $BD^2 = BC^2 + CD^2 - 2BC.CD.\cos B\hat{C}D$	
	$6^2 = 2^2 + 7^2 - 2(2)(7)\cos B\hat{C}D$	✓CA substitution into cosine rule
	$\cos B\hat{C}D = \dfrac{17}{28}$	✓CA value of $\cos B\hat{C}D$
	$B\hat{C}D = 52,62°$	✓CA size of $B\hat{C}D$
	Area of $\Delta BCD = \dfrac{1}{2}.BC.CD.\sin B\hat{C}D$	
	$= \dfrac{1}{2}(2)(7)\sin 52,62°$	✓CA substitution into area rule
	$= 5,6 \text{ m}^2$	✓CA answer (6)
	OR	**OR**
	$\text{BD} = \dfrac{2r\cos^2\theta}{2\cos^2\theta - 1} = \dfrac{2(2)\cos^2 30°}{2\cos^2 30° - 1} = 6 \text{ m}$	✓A length of BD
	In ΔBCD: $BC^2 = BD^2 + CD^2 - 2BD.CD.\cos B\hat{D}C$	
	$2^2 = 6^2 + 7^2 - 2(6)(7)\cos B\hat{D}C$	✓CA substitution into cosine rule
	$\cos B\hat{D}C = \dfrac{81}{84}$	✓CA value of $\cos B\hat{D}C$
	$B\hat{D}C = 15,36°$	✓CA size of $B\hat{D}C$
	Area of $\Delta BCD = \dfrac{1}{2}.BD.CD.\sin B\hat{D}C$	
	$= \dfrac{1}{2}(6)(7)\sin 15,36°$	✓CA substitution into area rule
	$= 5,6 \text{ m}^2$	✓CA answer (6)
		[12]

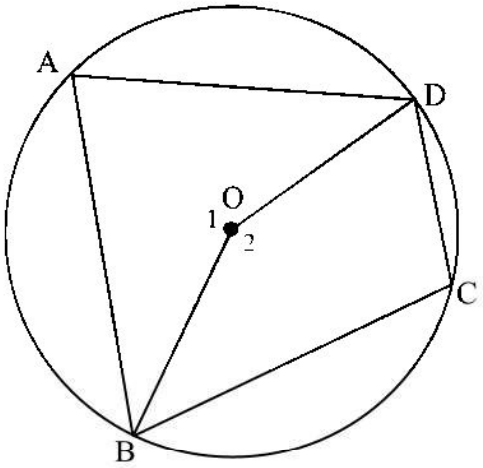
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QUESTION 8

8.1.1	$A\hat{D}C = 67°$	[ext ∠ of cyclic quad]	✓S ✓R (2)
8.1.2	$\hat{A} = 67°$	[alt ∠s; BC ∥ AD]	✓S ✓R (2)
8.1.3	$\hat{C} = 180° - 67°$ $= 113°$	[opp ∠s of cyclic quad]	✓ R ✓ S (2)
8.1.4	$\hat{B}_2 = \hat{A} = 67°$ $\hat{D}_1 = \hat{B}_2 = 67°$	[∠s opp = sides] [tan-chord th]	✓S/R ✓S ✓R (3)
8.2	$\hat{D}_2 = \hat{B}_3$ $\therefore AB = CD$	[alt. ∠s; BC ∥ AD] [converse: equal chords subtend equal angles]	✓S ✓R ✓R (3)
	OR		**OR**
	$\hat{D}_2 = 180° - (67° + 67°)$ $= 46°$ $\hat{B}_3 = 180° - (67° + 67°)$ $= 46°$ $\hat{D}_2 = \hat{B}_3$ $\therefore AB = CD$	[sum of ∠s in Δ] [∠s on a str line] [converse: equal chords subtend equal angles]	✓S/R ✓S $\hat{B}_3 = 46°$ ✓R (3)
			[12]

QUESTION 9

9.1



Construct radii OD and OB. ✓ construction

$\hat{O}_1 = 2\hat{C}$ [∠ at centre = 2×∠ at circumf] ✓S ✓R

$\hat{O}_2 = 2\hat{A}$ [∠ at centre = 2×∠ at circumf]

$\hat{O}_1 + \hat{O}_2 = 360°$ [∠s around a point] ✓S/R

$\therefore 2\hat{C} + 2\hat{A} = 360°$ ✓S

$\hat{C} + \hat{A} = 180°$

or: $\hat{A} + \hat{C} = 180°$ (5)

9.2.1

$\hat{G}_2 = 90°$ [radius ⊥ tangent] ✓S/R

$\hat{H}_4 = 90°$ [line from centre to midpoint of chord] ✓S ✓R

$\hat{G}_2 + \hat{H}_4 = 180°$

$\therefore$ OGEH is a cyclic quadrilateral [converse opp ∠s of cyclic quad] ✓R (4)

OR **OR**

$\hat{G}_2 = 90°$ [radius ⊥ tangent] S/R

$\hat{H}_1 = 90°$ [line from centre to midpoint of chord] ✓S ✓R

$\hat{G}_2 + \hat{H}_1 = 180°$

$\therefore$ OGEH is a cyclic quadrilateral [converse: exterior ∠ of cyclic quad] ✓R (4)

9.2.2

In ΔAHC and ΔDHC

1. AH = DH [given]
2. HC = HC [common]
3. $\hat{H}_2 = \hat{H}_3$ [both = 90°]

$\therefore \Delta AHC \equiv \Delta DHC$ [SAS] ✓S ✓R

$\therefore \hat{C}_1 = \hat{C}_2$ [congruent Δs] ✓R (3)

9.2.3	$\hat{B} = A\hat{C}D = 2x$ [$\angle$s in the same segment]	✓S ✓R
	$\therefore \hat{C}_1 = \hat{C}_2 = x$ [proved]	
	$OA = OC$ [equal radii]	
	$G\hat{A}C = \hat{C}_1 = x$ [$\angle$s opp = sides]	✓S/R
	$\hat{O}_3 = 2x$ [ext $\angle$ of Δ]	✓S/R
	$\therefore \hat{E}_1 = 180° - 2x$ [opp $\angle$s of cyclic quad]	✓S ✓R (6)
	OR	**OR**
	$\hat{B} = A\hat{C}D = 2x$ [$\angle$s in the same segment]	✓S ✓R
	$\therefore \hat{C}_1 = \hat{C}_2 = x$ [proved]	
	$OA = OC$ [radii]	
	$G\hat{A}C = \hat{C}_1 = x$ [$\angle$s opp = sides]	✓S/R
	$\hat{A}_2 = 90° - x$ [sum of $\angle s$ of Δ]	
	$\hat{A}_1 = x - \hat{A}_2 = 2x - 90°$	✓S
	$\therefore \hat{E}_1 = 180° - (90° + 2x - 90°)$ [sum of $\angle$s of Δ]	
	$= 180° - 2x$	✓S ✓R (6)
		[18]

QUESTION 10

10.1.1	$\frac{CE}{EA}=\frac{FC}{BF}$ [prop th , EF ∥ AB] $\therefore \frac{CE}{EA}=\frac{3}{2}$	✓R ✓ answer (2)
10.1.2	In ΔEFC and ΔABC 1) $\hat{C}_2=\hat{C}_2$ [common] 2) $\hat{E}_1=\hat{A}_1$ [corr ∠s , AB ∥ EF] 3) $E\hat{F}C=\hat{B}$ [sum of ∠s in Δ] ∴ ΔEFC ||| ΔABC [∠∠∠] $\frac{EF}{AB}=\frac{FC}{BC}$ [||| Δs] $\therefore \frac{EF}{AB}=\frac{3}{5}$	✓S ✓S/R ✓R ✓S/R ✓S (5)
10.2	In ΔEGF and ΔCGD 1) $\hat{E}_1=\hat{C}_1$ [alt ∠s , EF ∥ CD] 2) $\hat{F}_2=\hat{D}_2$ [alt ∠s , EF ∥ CD] 3) $\hat{G}_3=\hat{G}_1$ [vert opp ∠s] ∴ ΔEGF ||| ΔCGD [∠∠∠] $\frac{EG}{CG}=\frac{EF}{CD}$ [||| Δs] But, CD = AB [opp sides of parm ABCD] $\therefore \frac{EG}{CG}=\frac{EF}{AB}$ $\therefore EG=\frac{CG.EF}{AB}$	✓S/R ✓S/R ✓S/R ✓S/R ✓S (5)
		[12]

TOTAL: 150 MARKS

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