OL Maths T1 MS

Monday, July 28, 2025 3:28 PM

Q1

7(b)(i)	[$P\hat{Q}T$ =] 58	**B1**	
	$P\hat{T}Q$ = 32 angles in same segment $T\hat{P}Q$ = 90 angles in semi-circle $P\hat{Q}T$ = 58 angles in triangle	**B2**	**B1** for two reasons *Alternative*: $T\hat{S}Q$ = 90 angles in a semi-circle $T\hat{S}P$ = 58 $T\hat{Q}P$ = 58 angles in same segment
7(b)(ii)	116	**2**	**B1** for $S\hat{Q}R$ = 32 or $Q\hat{S}R$ = 32
7(b)(iii)	26	**1**	

Q2

6	**(a) (i)**	23	**1**	
	(ii)	90 with reason	**1**	
	(iii)	Parallel lines established	**1**	
	(b)	Convincing argument	**3**	This must have e.g. $XQ = XY$ justified. If there is no justification, then MAX **B2** from **B1** for $XQ = XY$ oe And **B1** for relating this to the perimeter of PXZ Or **B1** for equal (alternate or bisected) angles

Q3

			1ft	
(b) (i)	**(a)**	$Q\hat{O}S = 90 - x$ and conclusion	1	
	(b)	$\frac{1}{2}(90 + x)$ oe cao	2	M1 for ½ (180 – (90 – x))
(ii)	**(a)**	3 × ½ (90 – x) = 2 × ½ (90 + x) leading to 180 + 2x = 270 – 3x	2	M1 for 3 × ½ (90 – x) = 2 × their OQS
	(b)	18	1	

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Q4

Q4

4	**(a)**	**(i)** 38 **(ii)** 38 **(iii)** 74 **(iv)** 68	1 1ft 1 1ft	 Their **(i)** (must be < 90°) 180 – (their **(iii)** + their **(i)** or **(ii)**) or 106 – their **(i)** dep on positive ans.
	(b)	$(y =)$ ½(90 – x) oe	3	**B2** for $y + y + 90 + x = 180$ or better **B1** for ABO = y or (OAC =) 90

Q5

35.2 or 35.16 to 35.24	**6**	**B1** for $\angle ORQ = 90$ soi **B1** for $\angle OQR = 20$ or $\angle ROQ = 70$ **M2** for [radius =] 12 tan *their* 20 oe or $[PQ =]\dfrac{12\sin(theirPRQ)}{\sin 35}$ oe or $[PR =]\dfrac{12\sin(their20)}{\sin 35}$ oe or **M1** for $\tan their20 = \dfrac{OR}{12}$ oe or $\dfrac{\sin(theirPRQ)}{PQ} = \dfrac{\sin 35}{12}$ oe or $\dfrac{\sin(their20)}{PR} = \dfrac{\sin 35}{12}$ oe **M1** for $\frac{1}{2}(theirOR)^2 \sin(180 - their70) + \frac{1}{2} \times 12 \times theirOR$ or $\frac{1}{2} \times 12 \times (theirOQ + theirOP)\sin their20$ oe or $\frac{1}{2} \times 12 \times their PR \times \sin(theirPRQ)$

Q6

63.1 or 63.10 to 63.13	**5**	**M2** for $[r=]\frac{360\times 7.3}{2\pi\times 82}$ oe or **M1** for $\frac{82}{360}\times 2\pi r=7.3$ oe **M2** for $\frac{(360-82)}{360}\pi\times(their 5.10)^2$ oe or **M1** for $\frac{(360-82)}{360}\pi\times(their 5.10)^2$ seen or for $\frac{82}{360}\pi\times(their 5.10)^2$ oe isw If 0 scored, **SC1** for $\frac{(360-82)}{360}\times k\pi$ oe

Q7

3(a)(i)	*AO* and *BO* are radii, so 2 equal sides	**1**	
3(a)(ii)	[$B\hat{E}C$ =] 22° nfww	**3**	**B1** for $\angle BOC = 68°$ soi or for $\angle BOA = 112°$ soi or $\angle OBC = 56°$ soi **B1** for $\angle OCE$ or $\angle ACE = 90°$ soi