

1(b)(i)	$\frac{y}{2}$ oe	1	
1(b)(ii)	x	1	
1(b)(iii)	$90 + x$ oe	2	FT $90 + \text{their (a)(ii)}$ B1 for $\hat{BAC} = 90^\circ$ or $\hat{BDC} = 90^\circ$
1(b)(iv)	$90 - x - \frac{y}{2}$ oe	1	
2	27	2	B1 for $\hat{BOQ} = 54$ soi or $\hat{OBQ} = 90$ soi or $\hat{BOQ} = 2x$ soi
3(a)	35	1	
3(b)	100	2	B1 for $\angle OAB = 55$ or $\angle OBA = 55$
4(a)	66	2	M1 for $\frac{180 - 48}{2}$ soi
4(b)	108	1	
4(c)	126	1	
5(a)	$\hat{ABO} = 50^\circ$ angles on straight line $\hat{AOB} = 80^\circ$ angles in isosceles triangle $\hat{ACB} = 40^\circ$ angles at centre twice angle at circumference	3	B1FT for one correct angle with reason B1 for $\hat{ACB} = 40^\circ$ nfw
6.	Use of Pythagoras leading to 10.5 oe	4	B1 for $OP = 4$ and $PQ = x$ soi M1 for $OQ^2 = OT^2 + TQ^2$ oe soi B1 for $x^2 + 4x + 4x + 16$ seen or $x^2 + 8x + 16$ seen
7(b)(i)	124°	2	B1 for $\angle ADB$ or $\angle BCA = 62^\circ$ soi or $\angle AOD = 56^\circ$ soi or $\angle AOB = 124^\circ$ soi
8(a)	34° cao	1	
8(b)	68° cao	1	
8(c)	77° cao	1	

9(a)	$\angle BCX = \angle DCY$, [vertically] opposite $\angle XBC = \angle BCX$, $\angle YDC = \angle DCY$, angles in isosceles [triangles] Hence $\angle XBC = \angle YDC$ $\angle CXB = \angle DYC$, third angle in triangle Hence triangles similar	3	B1 for two correct pairs of angles B1 for correct reason for one pair of angles
9(b)(i)	90 – x oe final answer	1	
9(b)(ii)	180 – 2 x oe final answer	1	FT 2 \times <i>their</i> algebraic (b)(i)
10(a)	53	1	
10(b)	40	1	
10(c)	22	1	
11(a)	106	1	
11(b)	127	1	
11(c)	59	1	
11(d)	31	1	FT 90 – <i>their</i> (c)
12(a)(i)	$\frac{y}{2}$ oe angle at centre = twice angle at circumference oe	2	B1 for $\frac{y}{2}$
12(a)(ii)	90 – y oe [Angle between] radius and tangent = 90°, [sum of angles in a triangle]	2	B1 for 90 – y
12(a)(iii)	$2y$ oe or 2(90 – <i>their</i> (a)(ii)) or 180 – 2 <i>their</i> (a)(ii) Angle in semicircle = 90°	2FT	FT dependent on expressions in y B1 for $2y$
13(a)	Angles in same segment are equal	1	
13(b)	$\angle PQT = 55^\circ$	1	
13(c)	$\angle SPQ = 70^\circ$	1	
13(d)	$\angle SRQ = 110^\circ$	1	FT 180 – <i>their</i> (c)
14 (a)	<i>TAB</i> <i>ATB</i> Statement mentions tangent and radius <i>ABT</i>	2	B1 for 2 pairs of equal angles.

15 (a)			
(b)	146	1	
(c)	34; or FT <i>their</i> (a)/2; or FT 180 – <i>their</i> (b)	1 ✓	
(d)			
16 (a) (i)	Convincing explanation	1	
(ii)	28	2	B1 for $\widehat{OCD} = 124$ or triangle <i>COD</i> isosceles soi
(iii)	76	1ft	
17 (a)			
(b)			
(c)	48 or FT 110 – <i>their</i> (b)	1 ✓	

Mega Lecture

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