

Q1. (2017)

19	Alternative method 1		
	$BDC = 24$	B1	May be on the diagram
	$DFC = \frac{180 - 24}{2}$ or $DCF = \frac{180 - 24}{2}$ or $\frac{156}{2}$ or 78	B1dep	May be on the diagram Finding a base angle in triangle CDF
	$(3x =) 180 - \text{their } 78$ or $(3x =) 24 + \text{their } 78$ or $(3x =) 102$	M1	oe May be on the diagram
	34	A1	May be on the diagram
	Alternative method 2		
	$BDC = 24$	B1	May be on the diagram
	$DFC = 180 - 3x$	M1	May be on the diagram
	$2(180 - 3x) + 24 = 180$ or $360 - 6x + 24 = 180$ or $3x + 78 = 180$ or $(3x =) 102$	M1dep	oe
	34	A1	May be on the diagram
	Additional Guidance		
	If angles in the same segment are not used ie all the working is using triangle ABF then award maximum of 2 marks		
	If triangle ABF is assumed to be isosceles and there is no evidence of angle $BDC = 24$ being used then award maximum of 2 marks		
	If triangle ABF is used as isosceles and correctly justified then all marks are available eg 'triangle ABF is similar to triangle CDF '		
	Answer of 34 does not imply full marks		

Q2. (2018)

22	Alternate segment or Reason on first line of working is incorrect	B1	oe Any incorrect statement B0
	Additional Guidance		
	Incorrect theorem stated in first line	B1	
	First line is incorrect. It should say alt segment	B1	
	Angles not in same segment	B1	
	Angles in same segment are not equal	B0	
	Opposite segments (are not equal)	B0	
	First line is incorrect. It should say opposite segment	B0	
	The angle between the chord and the tangent is equal to the angle in the opposite segment	B0	
	Angle ACB is not in the same segment, it is alternate	B0	
	Angles are not in the same segment, they are alternate	B0	

Q3. (2020)

Q	Answer	Mark	Comments
21(a)	Angle $ABP = 71$ or $180 - 2 \times 71$ or $180 - 142$ or $(180 - 90 - 71) \times 2$	M1	oe may be marked on diagram in correct position
	38	A1	
	Additional Guidance		
	71 or 38 in working with either angle correctly identified, 180 on answer line		M1A0
	71 or 38 in working with neither angle correctly identified, 180 on answer line		M0A0

Q4. (2020)

Q	Answer	Mark	Comments
21(b)	Alternative method 1		
	(Angle $CXD =$) $360 - 204$ or 156	M1	may be marked on diagram in correct position
	$156 \div 2 = 78$ and Yes or $78 \times 2 = 156$ and Yes	A1	
	Alternative method 2		
	(Angle $CXD =$) $78 \times 2 = 156$	M1	may be marked on diagram in correct position
	$204 + 156 = 360$ and Yes or $360 - 156 = 204$ and Yes	A1	
	Additional Guidance		
	Angle CXD should be double angle CED		M0A0