

Q	Marking Instructions	AO	Marks	Typical Solution
8(a)	Uses binomial theorem to expand bracket – correct unsimplified expression but condone sign error	AO1.1a	M1	$1 + \binom{10}{1}(-2x)^1 + \binom{10}{2}(-2x)^2$
	Obtains constant term and x term, both correct	AO1.1b	A1	$= 1 - 20x + 180x^2 \dots$
	Obtains correct x^2 term	AO1.1b	A1	
(b)	Selects $x = 0.001$	AO3.1a	B1	Substituting $x = 0.001$
	Substitutes 'their' chosen value of x into 'their' expansion from part (a) to obtain a 5 decimal place value	AO1.1a	M1	$1 - 0.020 + 0.000180 = 0.98018$
	Gives a correct explanation to confirm that the value found from the calculator is 0.98018 to 5 decimal places which is the same as the value found by using the expansion	AO2.4	A1	$0.998^{10} = 0.980179 \dots = 0.98018$ to 5 dp, which matches Carly's value.
	Total		6	