

Question	Scheme	Marks	AOs
<b>1</b>	Attempts to differentiate $x^n \rightarrow x^{n-1}$ seen once	M1	1.1b
	$y = 2x^3 - 4x + 5 \Rightarrow \frac{dy}{dx} = 6x^2 - 4$	A1	1.1b
	For substituting $x = 2$ into their $\frac{dy}{dx} = 6x^2 - 4$	dM1	1.1b
	For a correct method of finding a tangent at $P(2,13)$ . Score for $y - 13 = "20"(x - 2)$	ddM1	1.1b
	$y = 20x - 27$	A1	1.1b
		<b>(5)</b>	
<b>(5 marks)</b>			

### Notes

**M1:** Attempts to differentiate  $x^n \rightarrow x^{n-1}$  seen once. Score for  $x^3 \rightarrow x^2$  or  $\pm 4x \rightarrow 4$  or  $+5 \rightarrow 0$

**A1:**  $\left(\frac{dy}{dx} = \right) 6x^2 - 4$  which may be unsimplified  $6x^2 - 4 + C$  is A0

**dM1:** Substitutes  $x = 2$  into their  $\frac{dy}{dx}$ . The first M must have been awarded.

Score for sight of embedded values, or sight of " $\frac{dy}{dx}$  at  $x = 2$  is" or a correct follow through.

Note that 20 on its own is not enough as this can be done on a calculator.

**ddM1:** For a correct method of finding a tangent at  $P(2,13)$ . Score for  $y - 13 = "20"(x - 2)$

It is dependent upon both previous M's.

If the form  $y = mx + c$  is used they must proceed as far as  $c = \dots$

**A1:** Completely correct  $y = 20x - 27$  (and in this form)