

Question	Answer	Mark	Mark scheme	Additional guidance
14 (a)	−2.5	M1	for drawing a tangent at $t = 5$	No tangent drawn score 0 marks
		M1	(dep on M1) for a complete method to find the gradient eg tangent at $t = 5$ and “10” ÷ “4” or an answer in the range 2.0 to 2.8	Working may be seen on the diagram
		A1	for answer in the range −2.0 to −2.8 dependent on tangent drawn	Accept answers in the form $\frac{a}{b}$ where a and b are integers
(b)	79	M1	for a method to find an estimate for the area of at least 1 trapezium under the curve, eg $\frac{1}{2} \times 2 \times (25 + 16)$ (= 41) oe or $\frac{1}{2} \times 2 \times (16 + 9)$ (= 25) oe or $\frac{1}{2} \times 2 \times (9 + 4)$ (= 13) oe or for a method to find an estimate for the area of at least 1 rectangle with heights at intersection of midpoint and curve, eg 2×20.5 (= 41) oe or 2×12.5 (= 25) oe or 2×6 (= 12) oe	May be seen as a rectangle added to a triangle Allow consistent use of incorrect width for both M marks
		M1	for a complete method, eg $\frac{1}{2} \times 2 \times (25 + 16) + \frac{1}{2} \times 2 \times (16 + 9) + \frac{1}{2} \times 2 \times (9 + 4)$ oe or $\frac{1}{2} \times 2 \times (25 + 4 + 2(16 + 9))$ or $(2 \times 20.5) + (2 \times 12.5) + (2 \times 6)$	Allow 1 error in y values used
		A1	For 79 or 78	Allow 78 only if it comes from rectangle/midpoint method