

1	Attempt use of product rule
	Obtain $6\cos(x^2 + 1) - 12x^2 \sin(x^2 + 1)$

1	Use identity to express integrand in the form $k_1 + k_2 \cos 2x$
	Obtain correct $3 - 3\cos 2x$
	Integrate to obtain $3x - \frac{3}{2}\sin 2x$
2	Attempt solution of quadratic equation in e^{2x} to obtain at least one value of e^{2x}
	Obtain $(e^{2x} - 12)(e^{2x} + 4) = 0$ OE, and hence at least $e^{2x} = 12$
	Obtain $x = \frac{1}{2}\ln 12$ or 1.24 and no other solution

1	Integrate to obtain $2\ln(4x + 1)$
	Apply limits correctly to $k\ln(4x + 1)$ and use at least one relevant logarithm property
	Obtain $2\ln 45 - 2\ln 9 = 2\ln 5$ or equivalent, and conclude $\ln 25$

1	Apply relevant logarithm property
	Obtain correct equation without logarithms $\frac{3x+5}{x-2} = e^4$ or equivalent
	Solve equation to find exact value of x
	Obtain $\frac{2e^4 + 5}{e^4 - 3}$