

C1 Differentiation questions

1. Differentiate the following functions

(a) $f(x) = 3x^{\frac{2}{3}}$

(b) $f(x) = \frac{3}{2\sqrt{x}}$

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2. Find the gradient of the tangent of the curve

$y = (3x + 2)(x^2 - 1)$ at the point when $x = 1$

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3. Find the equation of the tangent on the curve $y = x^3 - 3x + 2$ at the point where the curve crosses the y axis.

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4. Find the derivative of $y = \frac{x^4 + 1}{x^2}$

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5. Find the derivative of $y = x\sqrt{x} - \frac{x^2}{\sqrt{x}}$

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6. Find the coordinates of the point(s) on the curve $y = 3x^3 - x + 8$ at which the gradient is 0

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7. Locate the turning points for the curve $y = 3x - \frac{x^3}{4}$

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