

Differentiation/Gradients

Increasingly
Difficult
Exercises

- a) Differentiate
 $y = x^2$
- b) Differentiate
 $y = x^2 + 5x - 1$
- c) Differentiate
 $y = 3x^2 - 2x + 7$
- d) Find the gradient function of the curve $y = x^2 + 2x + 1$.
- e) Find the gradient of the curve $y = x^2 + 2x + 1$ when $x = 5$.
- f) Find the gradient of the curve $y = x^2 - 3x + 2$ when $x = 2$.
- g) Find the gradient of the curve $y = 2x^2 + 5x - 7$ when $x = -3$.
- h) Find the gradient of the curve $y = 5 + 3x - x^2$ when $x = -2$.
- i) Find the equation of the tangent to the curve $y = x^2 + 3x - 2$ at $(1, 2)$.
- j) Find the equation of the tangent to the curve $y = x^2 - 5x + 1$ when $x = 2$.
- k) Find the equation of the tangent to the curve $y = 2x^2 + 3x - 5$ when $x = -4$.
- l) Find the equation of the tangent to the curve $y = 2 - 3x - 5x^2$ when $x = -3$.

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