

A-Level Starter Activity



Topic: Differentiating Quadratics

Chapter Reference: Pure 1, Chapter 12

6
minutes

1. Find $\frac{dy}{dx}$ of the curve, $y = x^2 + 4x + 6$

(1)

2. Find $\frac{dy}{dx}$ of the curve, $y = 2x^2 - 5x - 2$

(1)

3. Find $\frac{dy}{dx}$ of the curve, $y = (x + 5)(4x - 2)$

(2)

4. Find $\frac{dy}{dx}$ of the curve, $y = (-9x + 3)(2x - 4)$

(2)

5. Find the values of x for which $\frac{dy}{dx} = 0$ when $y = (x - 3)(x + 5)$

(4)

Solutions

1.

$y = x^2 + 4x + 6$ $\frac{dy}{dx} = 2x + 4$	M1
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2.

$y = 2x^2 - 5x - 2$ $\frac{dy}{dx} = 4x - 5$	M1
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3.

$y = (x + 5)(4x - 2)$ $y = x^2 + 18x - 10$	M1
$\frac{dy}{dx} = 2x + 18$	M1

4.

$y = (-9x + 3)(2x - 4)$ $y = -18x^2 + 42x - 12$	M1
$\frac{dy}{dx} = -36x + 42$	M1

5.

$y = (x - 3)(x + 5)$ $y = x^2 + 2x - 15$	M1
$\frac{dy}{dx} = 2x + 2$	M1
$2x + 2 = 0$ $2x = -2$	M1
$x = -1$	M1

