

Differentiation by Rule

Find the gradient function $\frac{dy}{dx}$ when:

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(c) $y = x^7$ (d) $y = x^6$
(e) $y = x$ (f) $y = x^{10}$

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Find the gradient function $\frac{dy}{dx}$ when:

- (a) $y = 7x^2$
(b) $y = 3x^5$
(c) $y = 10x^6$
(d) $y = 2x^9$
(e) $y = \frac{1}{2}x^8$
(f) $y = \frac{1}{5}x^4$
(g) $y = 0.3x^5$
(h) $y = -6x^3$

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Find the gradient function $\frac{dy}{dx}$ when:

- (a) $y = x^2 + x^5$
(b) $y = 3x^2 + 7x^5$
(c) $y = 5x^4 - x^3$
(d) $y = 2x^3 - x^2 + 5x$
(e) $y = 3x + 6x^4$
(f) $y = 0.5x^7 + 3$
(g) $y = \frac{1}{4}x^5 - x^3 + 7x$
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- (a) Expand and simplify $(x + 3)(x^2 - 5)$
(b) Hence find the gradient function $\frac{dy}{dx}$
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