

Find the derivatives of the functions below.

1) $f(x) = 5$

2) $f(x) = x^{3.2}$

3) $f(x) = x^2 + 3x + 1$

4) $f(x) = 3x^7 + 2x^6 + 8x^5 + 2x^4 + x^3 - 5x^2 - x - 81$

5) Find the tangent line to the curve $f(x) = x^2 + 4$ at $x = 2$

Use the product rule to calculate the derivatives below.

1) $f(x) = x^2$, $g(x) = 3x^4$. Find $\frac{d}{dx}(f(x) \cdot g(x))$

2) $f(x) = x^2 - x + 1$, $g(x) = x^3 + \sqrt{x}$. Find $\frac{d}{dx}(f(x) \cdot g(x))$

3) $f(x) = x^{3/4}$, $g(x) = x^{1/4}$. Find $\frac{d}{dx}(f(x) \cdot g(x))$

Use the quotient rule to calculate the derivatives below.

1) $f(x) = x^2$, $g(x) = 3x^4$. Find $\frac{d}{dx}(f(x)/g(x))$

2) $f(x) = x^2 - x + 1$, $g(x) = x^3 + \sqrt{x}$. Find $\frac{d}{dx}(f(x)/g(x))$

3) $f(x) = x^{3/4}$, $g(x) = x^{1/4}$. Find $\frac{d}{dx}(f(x)/g(x))$