

Derivatives of sin, cos, and polynomials

Compute the derivatives of the following functions:

$$1. f(x) = 3x^2 + 2 \sin(x)$$

Find $f'(\pi)$

$$2. g(x) = -\cos(x) + 3x^2 + 9x + 18$$

Find $g'(\frac{3\pi}{4})$

$$3. f(x) = 3 \sin(x) + 4 \cos(x) + 4x$$

Find $f'(\frac{\pi}{4})$

$$4. g(x) = 4x^3 + 3x + 2 \cos(x) - \sin(x)$$

Find $g'(\frac{\pi}{2})$

$$5. f(x) = 12x^2 - 4x + 4\sin(x)$$

Find $f'(\pi)$

$$6. g(x) = \sin(x) - \cos(x) + x^2 - 1$$

Find $g'(0)$

$$7. f(x) = 3 \sin(x) - 4 \cos(2) + 2x^3 - 1$$

Find $f'(0)$

$$8. g(x) = 8x^3 + 3x^2 - 4x + 10$$

Find $g'(4)$

$$9. f(x) = 1 + 2x + 3x^2 + 4\sin(x) - 5\cos(x)$$

Find $f'\left(\frac{\pi}{2}\right)$

$$10. g(x) = \sin(x) + \cos(x) + 2x$$

Find $g'(\pi)$

$$11. f(x) = 4x^3 + \sin(x)$$

Find $f'(\pi)$

$$12. g(x) = 470x^{20} - 250x^{13} + \sin x$$

Find $g'(0)$

$$13. f(x) = 5\sin(x) + 2x^3 - \cos(x)$$

Find $f'\left(\frac{5\pi}{4}\right)$

$$14. g(x) = 3\cos(x) + x^2 + 2\sin(x) + 4x^3$$

Find $g'(\pi)$

$$15. f(x) =$$

Find $f'(0)$

$$16. g(x) = \cos(x) + 3x^3 - 2x^4 + 10\sin(x)$$

Find $g'\left(\frac{3\pi}{2}\right)$