

Derivatives

Advanced

Second Order

1.
$$\frac{d^2}{dx^2}(3 + x^3 - 5x^2 - 8x)$$

2.
$$\frac{d^2}{dx^2}\sqrt{10 - x^2} x$$

3.
$$\frac{d^2}{dx^2}e^{xx}$$

4.
$$(\sqrt{4 + x})''$$

5.
$$\frac{d^2}{dx^2}\frac{x^2}{-2 + x}$$

6.
$$\frac{d^2}{dx^2}\frac{\ln(x)}{10x}$$

7.
$$\frac{d^2}{dx^2}\left(\frac{-1 + x^2}{x}\right)$$

8.
$$\frac{d^2}{dx^2}\cos\left(\frac{ax}{\pi}\right)$$

9.
$$\frac{d^2}{dx^2}\left(\frac{9 + 3x}{2 - x}\right)$$

10.
$$(\sin^2(\theta))''$$

Answers

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1. $6x - 10$

2. $\frac{2x^3 - 30x}{(10 - x^2)\sqrt{10 - x^2}}$

3. $e^x x + 2e^x$

4. $-\frac{1}{4(4+x)^{\frac{3}{2}}}$

5. $\frac{8}{(-2+x)^3}$

6. $-\frac{-2\ln(x) + 3}{10x^3}$

7. $-\frac{2}{x^3}$

8. $-\frac{a^2 \cos\left(\frac{ax}{\pi}\right)}{\pi^2}$

9. $\frac{30}{(2-x)^3}$

10. $\cos(2\theta) \cdot 2$