

Higher-Order Derivatives

In problems 1-6, Find the second derivative of the function.

1. $f(x) = 7x - 3$	2. $f(x) = x^2 + 9x - 2$
3. $f(x) = x^3 - 3x^2 + 4x + 11$	4. $f(x) = \frac{2}{(3x)^3}$
5. $f(x) = (3x - 1)^5$	6. $f(x) = \frac{x - 7}{x + 3}$

In problems 7-9, Find the third derivative of the function.

7. $f(x) = x^4 + 2x^3$	8. $f(x) = 2x^2(x + 2)^4$
9. $f(x) = \frac{1}{\sqrt[3]{x}}$	

In problems 10-11, Find the given value.

10. $f(x) = x^3 - 4x^2 + x - 7$, $f''(2)$	11. $f(x) = \sqrt{3x + 16}$, $f''(3)$
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In problems 12-13, Find the higher-order derivative.

12. $f'(x) = x^2 - 5x$, $f''(x)$	13. $f'''(x) = 5\sqrt{x + 3}$, $f^{(4)}(x)$
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In problems 14-15, Find the second derivative and solve the equation $f''(x) = 0$.

14. $f(x) = \frac{1}{6}x^3 + 2x^2 + 5x - 7$	15. $f(x) = x\sqrt{x^2 - 4}$
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