

### Derivative Practice

Find the derivative of the following functions. Note that it may be easier to simplify *before* you differentiate.

1.  $f(x) = (x^2 + 1)(x^3 - 2x + 5)$

2.  $h(x) = \frac{(x^2 + 2)}{(3x^2 - \pi x)}$

3.  $y = x(1 - \frac{4}{\sqrt[4]{x^5}})$

4.  $g(t) = (2 - t^2 + 11t)(3t^3 - 2t^5 - \sqrt[3]{t})$

5.  $g(x) = \frac{(3x^4 + 2\sqrt{x} + 10)}{x^3}$

6.  $k(x) = \frac{(3x^4 + 2\sqrt{x} + 10)}{x^3 + \sqrt{17}}$

7.  $y = (x - 3)(x + 3)$

$$8. \ f(x) = \frac{(2x^{-2} - x^2 + 2)}{(3\sqrt[5]{x^2} - 52.1x)}$$

$$9. \ R(s) = (\frac{s^4 - 8}{2})(s^{\frac{3}{5}} + \frac{1}{s})$$

$$10. \ f(x) = \frac{x(x - 2)}{\sqrt{x}}$$

$$11. \ G(x) = (x - a)(x - b)(x - c), \text{ where } a, b \text{ and } c \text{ are constants.}$$