# 14.6 Product Rule

Name:_____

Find the derivative of the function

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

2. $f(x) = 2\sqrt{x}(x^2 + 4)$

3. $f(x) = (6x + 5)(x^3 - 2)$

4. $f(x) = x^3 \cos x$

5. $f(x) = \sqrt{x} \sin x$

6. $h(z) = (2 - \sqrt{z})(3 + 8\sqrt[3]{z^2})$

7. $g(x) = (x - \frac{2}{x})(7 - 2x^3)$

Find f′(x), f″(x), f‴(x) and $f^{IV}(x)$ for the function

8. $f(x) = x^5 - 2x^3 + 3x^2 - 4x$

Find f′(x) and f′(c)

9. $f(x) = -2x \sin x \qquad c = \frac{\pi}{2}$

10. $f(x) = (3x^2 - 4)(x - 4) \qquad c = 0$