# CH.2 AB HW 2-3 Prod. Rule / Quot. Rule Name_____

**Find each derivative**

1) $f(x) = (x^2 + 5)(2x - 7)$

2) $y = \sin x \cdot \cos x$

3) $f(x) = 4x \cdot \sin x$

4) $f(x) = 8x^2 \cdot \cos x$

5) $f(x) = \dfrac{3x^2 - 6}{2x^2 + 9}$

6) $y = \dfrac{\sin x}{\cos x}$

7) $y = \dfrac{2x + 5}{6x^2 - 7}$

8) $f(x) = \dfrac{4x^2 + 1}{x + 3}$

## Find the derivative of each

9) $f(x) = x^3 \cdot \sec x$

10) $f(x) = \dfrac{3x^2}{\left(x^2 - 6\right)^6}$

11) $f(x) = h(x) \cdot g(x)$

12) $f(x) = \dfrac{g(x)}{h(x)}$

## Find the equation of the tangent line and the normal line at the given point

13) $f(x) = \dfrac{x^4 + 2}{x - 3}$ ; $(2, -18)$

14) $y = x^2 \cdot \sin x$ ; $(\pi, 0)$