Calculus AB Name_____

Worksheet 10 - Quotient and Chain Rule

Period____

Differentiate each function with respect to the given variable.

1) $h(t) = \dfrac{5}{5t^{\frac{5}{3}} - 3}$

2) $r = \dfrac{x^5 + 2x^4}{3 - 2x^{-5}}$

3) $h(s) = \dfrac{1}{4 - 2s^{-3}}$

4) $f(w) = \dfrac{4w^2}{2\sqrt[5]{w^2} + 3}$

5) $f(s) = (2s^5 + 1)^{\frac{1}{3}}$

6) $f(r) = (-4r + 5)^4$

7) $f = \sqrt{t^3 + 3}$

8) $h = \sqrt[3]{-3t^2 + 2}$

9) $r = e^{3t^3}$

10) $g(w) = e^{4w^5}$

11) $f = \ln 4s^3$

12) $t = \ln x^4$

13) $f(t) = \sin t^8$

14) $f(w) = \cos 3w^9$

15) $h = \sec 3s^6$

16) $h(s) = \tan s^4$

17) Use the alternate definition of the derivative to fine $f'(1)$ where $f(x) = -x^2$.

18) Use the alternate definition of the derivative to fine $g'(-2)$ where $g(x) = \frac{1}{x}$.