Name : _____ Score : _____

Teacher : _____ Date : _____

Power, Constant, and Sum Rules

Differentiate each function with respect to the given variable.

1) $y = \frac{4}{x}$

2) $y = \frac{-7}{11} x^{\frac{3}{8}}$

3) $y = \frac{-11}{18} x^{\frac{1}{9}}$

4) $y = -4$

5) $y = 19$

6) $y = -17$

7) $y = -x^3 - 4x^2 + 5x$

8) $y = x^5 - 5x^4 + 4x^3$

9) $y = \frac{-4}{5} x^{\frac{4}{13}}$

10) $y = \frac{-20}{x^8}$

Name : _____ Score : _____

Teacher : _____ Date : _____

Power, Constant, and Sum Rules

Differentiate each function with respect to the given variable.

11) $y = \frac{9}{x^2}$

12) $y = x - 2$

13) $y = \frac{20}{x^4}$

14) $y = -x^5 + 9x^4 - 20x^3 + 12x^2$

15) $y = \frac{-3}{4} x^{\frac{-4}{11}}$

16) $y = \frac{13}{x^4}$

17) $y = 8$

18) $y = \frac{-9}{10} x^{\frac{-3}{7}}$

19) $y = -3$

20) $y = x^4 - x^3$

Name : _____ Score : _____

Teacher : _____ Date : _____

Power, Constant, and Sum Rules

Differentiate each function with respect to the given variable.

1) $y = \frac{4}{x}$

$\frac{dy}{dx} = \frac{-4}{x^2}$

2) $y = \frac{-7}{11} x^{\frac{3}{8}}$

$\frac{dy}{dx} = \frac{-21}{88x^{\frac{5}{8}}}$

3) $y = \frac{-11}{18} x^{\frac{1}{9}}$

$\frac{dy}{dx} = \frac{-11}{162x^{\frac{8}{9}}}$

4) $y = -4$

$\frac{dy}{dx} = 0$

5) $y = 19$

$\frac{dy}{dx} = 0$

6) $y = -17$

$\frac{dy}{dx} = 0$

7) $y = -x^3 - 4x^2 + 5x$

$\frac{dy}{dx} = -3x^2 - 8x + 5$

8) $y = x^5 - 5x^4 + 4x^3$

$\frac{dy}{dx} = 5x^4 - 20x^3 + 12x^2$

9) $y = \frac{-4}{5} x^{\frac{4}{13}}$

$\frac{dy}{dx} = \frac{-16}{65x^{\frac{9}{13}}}$

10) $y = \frac{-20}{x^8}$

$\frac{dy}{dx} = \frac{160}{x^9}$

Name : _____ Score : _____

Teacher : _____ Date : _____

Power, Constant, and Sum Rules

Differentiate each function with respect to the given variable.

11) $y = \frac{9}{x^2}$

$\frac{dy}{dx} = \frac{-18}{x^3}$

12) $y = x - 2$

$\frac{dy}{dx} = 1$

13) $y = \frac{20}{x^4}$

$\frac{dy}{dx} = \frac{-80}{x^5}$

14) $y = -x^5 + 9x^4 - 20x^3 + 12x^2$

$\frac{dy}{dx} = -5x^4 + 36x^3 - 60x^2 + 24x$

15) $y = \frac{-3}{4} x^{\frac{-4}{11}}$

$\frac{dy}{dx} = \frac{3}{11x^{\frac{15}{11}}}$

16) $y = \frac{13}{x^4}$

$\frac{dy}{dx} = \frac{-52}{x^5}$

17) $y = 8$

$\frac{dy}{dx} = 0$

18) $y = \frac{-9}{10} x^{\frac{-3}{7}}$

$\frac{dy}{dx} = \frac{27}{70x^{\frac{10}{7}}}$

19) $y = -3$

$\frac{dy}{dx} = 0$

20) $y = x^4 - x^3$

$\frac{dy}{dx} = 4x^3 - 3x^2$