Name : _____ Score : _____

Teacher : _____ Date : _____

Power, Constant, and Sum Rules

Differentiate each function with respect to the given variable.

1) $y = 13$

2) $y = -x - 1$

3) $y = \frac{8}{x^4}$

4) $y = \frac{8}{11} x^{\frac{-2}{5}}$

5) $y = x^2 - 9x + 14$

6) $y = \frac{-9}{10} x^{\frac{4}{11}}$

7) $y = x^2 + x$

8) $y = \frac{-5}{x}$

9) $y = \frac{7}{8} x^{\frac{-3}{10}}$

10) $y = x^5 - 13x^4 + 52x^3 - 60x^2$

Name : _____ Score : _____

Teacher : _____ Date : _____

Power, Constant, and Sum Rules

Differentiate each function with respect to the given variable.

11) $y = \frac{1}{x^6}$

12) $y = -16$

13) $y = x^5 - 9x^4 + 27x^3 - 27x^2$

14) $y = \frac{-2}{9} x^{\frac{2}{5}}$

15) $y = \frac{15}{x^5}$

16) $y = 12$

17) $y = -20$

18) $y = \frac{-14}{x^6}$

19) $y = -4$

20) $y = \frac{-11}{13} x^{\frac{1}{9}}$

Name : _____ Score : _____

Teacher : _____ Date : _____

Power, Constant, and Sum Rules

Differentiate each function with respect to the given variable.

1) $y = 13$

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

2) $y = -x - 1$

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

3) $y = \frac{8}{x^4}$

$\frac{dy}{dx} = \frac{-32}{x^5}$

4) $y = \frac{8}{11}x^{\frac{-2}{5}}$

$\frac{dy}{dx} = \frac{-16}{55x^{\frac{7}{5}}}$

5) $y = x^2 - 9x + 14$

$\frac{dy}{dx} = 2x - 9$

6) $y = \frac{-9}{10}x^{\frac{4}{11}}$

$\frac{dy}{dx} = \frac{-18}{55x^{\frac{7}{11}}}$

7) $y = x^2 + x$

$\frac{dy}{dx} = 2x + 1$

8) $y = \frac{-5}{x}$

$\frac{dy}{dx} = \frac{5}{x^2}$

9) $y = \frac{7}{8}x^{\frac{-3}{10}}$

$\frac{dy}{dx} = \frac{-21}{80x^{\frac{13}{10}}}$

10) $y = x^5 - 13x^4 + 52x^3 - 60x^2$

$\frac{dy}{dx} = 5x^4 - 52x^3 + 156x^2 - 120x$

Name : _____ Score : _____

Teacher : _____ Date : _____

Power, Constant, and Sum Rules

Differentiate each function with respect to the given variable.

11) $y = \frac{1}{x^6}$

$\frac{dy}{dx} = \frac{-6}{x^7}$

12) $y = -16$

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

13) $y = x^5 - 9x^4 + 27x^3 - 27x^2$

$\frac{dy}{dx} = 5x^4 - 36x^3 + 81x^2 - 54x$

14) $y = \frac{-2}{9} x^{\frac{2}{5}}$

$\frac{dy}{dx} = \frac{-4}{45x^{\frac{3}{5}}}$

15) $y = \frac{15}{x^5}$

$\frac{dy}{dx} = \frac{-75}{x^6}$

16) $y = 12$

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

17) $y = -20$

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

18) $y = \frac{-14}{x^6}$

$\frac{dy}{dx} = \frac{84}{x^7}$

19) $y = -4$

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

20) $y = \frac{-11}{13} x^{\frac{1}{9}}$

$\frac{dy}{dx} = \frac{-11}{117x^{\frac{8}{9}}}$