Calculus AB

Name_____

Worksheet 28 - Derivatives Review

Period_____

Differentiate each function with respect to x.

1) $y = \left(-x^5 - 3\right)^3$

2) $y = \left(-3x^4 + 4\right)^{-5}$

3) $y = \sqrt{2x^3 + 3}$

For each problem, use implicit differentiation to find $\dfrac{dy}{dx}$ in terms of x and y.

4) $5y + xy = x$

5) $5x^2 y^2 + 3y = 3x^3$

Differentiate each function with respect to _x_.

6) $y = \ln 3x^3$

7) $y = \ln 5x^5$

8) $y = e^{2x^3}$

9) $y = x^{-1} + \dfrac{4}{5}x^{-2} - \dfrac{3}{2x^4}$

10) $y = \dfrac{1}{4}x^2 - \dfrac{1}{2x} - \dfrac{2}{5x^2}$

11) $y = \left(-3x^{\frac{3}{5}} + 3\right)\left(5x^2 - 2\right)$

12) $y = \left(\sqrt[5]{x^2} - 2\right)\left(4x^3 - 1\right)$

13) $y = \dfrac{2x^3 + 4x^2}{3\sqrt[5]{x} + 5}$

14) $y = \dfrac{4x^5 - 4}{3x^{\frac{2}{5}} + 5}$

15) $y = \tan 4x^5 \cdot \left(x^4 + 1\right)$

16) $y = \cos 2x^5$

17) $y = \dfrac{\sin 2x^5}{3x^4 - 2}$