Name:_____

Calculus Your Try Problems for Chapter 3

3a/b) Find $\frac{dy}{dx}$ for $y = x^8 + 3x^4 - 5x^{2.5} + \frac{x^2}{6} + \sqrt[5]{x} + \frac{3}{x^3}$.

3d/e) Find $\frac{dy}{dx}$ for $y = e^x + e^{x^2} + 5e^{-2x} - \frac{1}{3}e^{-6/x^2}$.

3f/g) Find $\frac{dy}{dx}$ for $y = 3\sin x + \cos 3x - 2\sec x^2$.

3h) Find $\frac{dy}{dx}$ for $y = (\tan x)\sqrt{5x+2} + 3x^2 e^{2x}$.

3k) Find the slope of the hyperbola $\frac{(x-2)^2}{9} - \frac{(y+1)^2}{16} = 1$ at the point $(3\sqrt{2}+2, 3)$.

3L) Find $\frac{dy}{dx}$ for $y = \sec^{-1} x + \ln(x^2+4)$.

For additional practice see the derivative progression worksheets.

Name:_____

Calculus Ch. 3 In-Class Worksheet A: Power Rule and Memorization

1) $y=x^2$

2) $f(x)=3x$

3) $r=3\theta^2$

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

5) $g(x)=x^{3.8}$

6) $g(y)=5y^{0.8}$

7) $u=x^{\frac{1}{2}}$

8) $v=\sqrt{x}$

9) $v=\sqrt{7x}$

10) $y=\sqrt[3]{x}$

11) $f(x)=\frac{2}{27}x^{-3}$

12) $y=\frac{1}{x^3}$

13) $p=\frac{8}{q}$

14) $y=\frac{1}{\sqrt{x}}$

15) $f(x)=\sin x$

16) $g(x)=\cos x$

17) $u=\tan x$

18) $v=\cot x$

19) $y=sec\ x$

20) $r=csc\,\theta$

21) $y=e^x$

22) $y=5e^x$

23) $y=e^{x+5}$

24) $f(x)=\ln x$

25) $f(x)=2\ln x$

26) $f(x)=\ln x^2$

27) $y=2^x$

28) $y=\log_5 x$

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Calculus Ch. 3 In-Class Worksheet B: Chain Rule

1) $y = e^{5x}$

2) $f(x) = e^{x^2}$

3) $r = \sin(3\theta)$

4) $y = \sin(x^3)$

5) $g(x) = \sqrt{4x^2 + 3x + 2}$

6) $g(y) = \dfrac{1}{\sqrt{2y^5 + 3y^3}}$

7) $u = \sqrt[4]{\tan x}$

8) $v = (\csc x)^{\frac{3}{5}}$

9) $v = \cos^2 x$

10) $v = \cos^2(x^2 + 3x)$

11) $f(x) = e^{\sin x}$

12) $y = \dfrac{1}{\tan(x^3)}$

13) $p = \sqrt[3]{\sec(e^{3x^3 - 12})}$

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Calculus Ch. 3 In-Class Worksheet C: Product Rule

1) $y = x \sin x$

2) $f(x) = x^2 e^x$

3) $r = (\cos\theta)(\ln x)$

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

5) $g(x) = \sqrt{x} \tan x$

6) $g(y) = \sqrt[3]{y}\, e^{y^3}$

7) $u = \dfrac{1}{x^2} \sin x$

8) $v = \dfrac{\cos x}{x}$

9) $v = (x^2 + 2x + 3)\ln(x^2 + 2x + 3)$

10) $y = (\sin x^2)(e^{x^2})$

11) $f(x) = x^2 \sin x\, e^x$