Name_____

Find dy/dx.

     1) $y = 3x^4 + 2x^3 - 8$

        A) $12x^3 + 6x^2 - 7$ B) $4x^3 + 3x^2 - 7$ C) $12x^3 + 6x^2$ D) $4x^3 + 3x^2$

Find the horizontal tangents of the curve.

     2) $y = x^2 - 10x + 33$

Find dy/dx.

     3) $y = (8x - 5)(2 - 6x^3)$

     4) $y = \dfrac{x^2}{6 - 8x}$

Find the equation of the line tangent to the curve at the given value of x.

     5) $y = 10x^2 + 9x$ at $x = 5$

Find dy/dx.

6) $y = 10x^{-2} + 8x^3 - 6x$

    A) $-20x^{-1} + 24x^2 - 6$ B) $-20x^{-1} + 24x^2$ C) $-20x^{-3} + 24x^2$ D) $-20x^{-3} + 24x^2 - 6$

7) $y = x^3 \tan x$

8) $y = \dfrac{\sin x}{8x}$

9) $y = x^7 - \csc x + 12$

    A) $7x^6 + \csc x \cot x$ B) $x^6 - \cot^2 x + 12$ C) $7x^6 - \csc x \cot x$ D) $7x^6 + \cos^2 x$

10) $y = 15x\cos x - 15 \sec x$

Find dy/dx.

1) $y = \sqrt{8 + \sin 2x}$

2) $y = \cos^4 x - \sin 5x$

3) $y = 6x\sqrt{12x - x^5}$

4) $y = \dfrac{3x+2}{\sqrt{5 - 4x}}$

Suppose that the functions f and g and their derivatives with respect to x have the following values at the given values of x.

5)

x	f(x)	g(x)	f '(x)	g '(x)
3	1	4	8	7
4	3	3	5	-4

a) **Find the derivative with respect to x of the given combination:** $g(f(x))$

b) **Find the value of the derivative at x = 4.**

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Name_____

Find the derivative of the given function.

1) $y = 3 \sin^{-1}(5x^4)$

2) $y = 3.1 \cos^{-1}(2t)$

3) $y = \tan^{-1}\sqrt{5x}$

Find dy/dx.

4) $f(x) = 5e^{-8x}$

5) $y = 8^x$

6) $y = \ln(8x^2)$

7) $y = \log(2x - 9)$