Calculus Worksheet #5 Unit 6 page 1 _____

Find f '(x) for each of the following.

1. $f(x) = 6x \sin(2x)$

2. $f(x) = \sec(x^2) \tan(x - 1)$

3. $f(x) = 5x^2\cos(x^5)$

4. $f(x) = 4\csc^3(x - 3)$

5. $f(x) = 2\cot(3x) - 6x^2$

6. $f(x) = \dfrac{2x^3}{\cos(3x)}$

7. $f(x) = \dfrac{3\tan(x + 2)}{(x + 2)^2}$

Find f '(x) and f ''(x) for each of the following.

8. $f(x) = \sin(5x)$

9. $f(x) = \tan(3 - 2x)$

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Find f '(x) and f ''(x) for each of the following.

10. $f(x) = \cos(2x)$

11. $f(x) = \sec(3x + 1)$

12. $f(x) = \cos(x^2)$

13. $f(x) = \cot(1 - x^3)$

14. $f(x) = \csc(5x - 2)$

Find dy/dx for each of the following.

15. $x \sin(y) + y \sin(x) = 1$

16. $\sec(y) = x^2 + 1$

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Find dy/dx for each of the following.

17. $\tan(xy) + y^2 = 3x$

18. $\cos(x)\sin(y) = 1 - x^2$

19. $\sin(x + 2y) - \cos(2x - y) = 1$

20. $y^2 = \csc(x) + 3\cot(y)$