Trigonometric Derivatives

Differentiate the following.

1. $f(x) = xcos(x)$
2. $f(x) = xsin(x)$
3. $f(x) = x - \tan(x)$
4. $f(x) = x - \cot(x)$
5. $f(x) = 2\tan(x) - 3\sec(x)$
6. $f(x) = 4\cot(x) + 5\csc(x)$
7. $f(x) = x^2 \sin(x) + 3$
8. $f(x) = x^2 \cos(x) - 7$
9. $f(x) = \frac{\tan(x)}{x}$
10. $f(x) = \frac{\cot(x)}{x}$
11. $f(x) = \frac{\cot(x)}{\sqrt{x}}$
12. $f(x) = \frac{\tan(x)}{\sqrt{x}}$
13. $f(x) = \sec(x)\tan(x)$
14. $f(x) = csc(x)\cot(x)$
15. $f(x) = x^3\cot(x)$
16. $f(x) = x^3\tan(x)$
17. $f(x) = \frac{x^2}{\sec(x)}$
18. $f(x) = \frac{x^2}{\csc(x)}$
19. $f(x) = 3\sin(x) - 2\cos(x) + 8x$

20. $f(x) = 2\cos(x) - 5\sin(x) + 6x$

21. $f(x) = xcsc(x) - 2x + 6$

22. $f(x) = xec(x) + 5x - 3$

23. $f(x) = \frac{1+\sin(x)}{x+\cos(x)}$

24. $f(x) = \frac{1-\sin(x)}{x-\cos(x)}$

25. $f(x) = (1-x)\cos(x)$

26. $f(x) = (1+x)\sin(x)$

27. $f(x) = \frac{1}{\sin(x)+\cos(x)}$

28. $f(x) = \frac{1}{\sin(x)-\cos(x)}$

29. $f(x) = \frac{x}{\sec(x)+\tan(x)}$

30. $f(x) = \frac{x}{\sec(x)-\tan(x)}$