Differentiation Practice

Find derivatives for the following functions.

1. $F(x) = 8x^5 - x - 1$ $F'(x) =$

2. $G(x) = \frac{3}{x^2} - 8\sqrt[4]{x}$ $G'(x) =$

3. $Y = \frac{2x-1}{x^3+5}$ $Y' =$

4. $F(x) = \left(2x^3 - 4\right)^5$ $F'(x) =$

5. $Y = (x-1)^3(x^2-3)^4$ $Y' =$

6. $F(x) = \frac{7}{(3x-1)^4}$ $F'(x) =$

7. $Y = \sin(2x+3)$ $\frac{dy}{dx} =$

8. $Y = 5\cos(2x)$ $Y' =$

9. $Y = \sin^2 4x$ $Y' =$

10. $F(x) = \ln x$ $F'(x) =$

11. $Y = \ln\sqrt{4x-3}$ $Y' =$

12. $F(x) = (\ln x)^3$ $F'(x) =$

13. $Y = e^{6x}$ $\frac{dy}{dx} =$

14. $F(x) = xe^{\sin x}$ $F'(x) =$

15. $x^2 + y^3 = 4$ $\frac{dy}{dx} =$

16. $2xy + y^2 = 2x$ $\frac{dy}{dx} =$

17. $Y = \arctan(2x)$ $Y' =$

18. $F(x) = \left[\frac{\tan 3x^2}{4x+3}\right]^3$ $F'(x) =$