Antiderivatives 8

Find the indicated antiderivative. Check your answers.

1. $\displaystyle\int \frac{(\ln x)^2}{x}\, dx =$

2. $\displaystyle\int \frac{1}{x \ln x}\, dx =$

3. $\displaystyle\int \frac{e^{\sec^{-1} x}}{x\sqrt{x^2 - 1}}\, dx =$

4. $\displaystyle\int \frac{2x + 1}{x^2 + 1}\, dx =$

5. $\displaystyle\int \frac{\tan^{-1} x}{x^2 + 1}\, dx =$

6. $\displaystyle\int \frac{1}{x(\ln x)^2}\, dx =$

7. $\displaystyle\int \frac{1}{\left(\sin^{-1} x\right)^3 \sqrt{1-x^2}}\, dx =$

8. $\displaystyle\int \frac{\left(\tan^{-1} x\right)^2}{x^2 + 1}\, dx =$

9. $\displaystyle\int \frac{e^{2x}}{1 - e^{2x}}\, dx =$

10. $\displaystyle\int \frac{e^x}{\sqrt{1 - e^{2x}}}\, dx =$