

ln and e Review - Homework

For each problem, find $\frac{dy}{dx}$

1) $y = \ln(-14x^3)$

2) $y = (\ln 2x)^5$

3) $y = \ln(4 - x\sqrt{2})$

4) $y = \ln(\ln(\cos x))$

5) $y = \frac{x^4}{1 - 2\ln x}$

6) $y = \ln^4 \sqrt{\frac{x^2 + 1}{x^2 - 1}}$

7) $y = e^{4x-4}$

8) $y = 2e^{\frac{2x}{3}}$

9) $y = xe^2 - e^x$

10) $y = 4^{\sqrt{2x-1}}$

11) $y = \pi^x x^\pi$

12) $x^4 + e^{xy} - y^2 = 20$

Find the integral or definite integral as indicated

$$13) \int \frac{1}{5-x} dx$$

$$14) \int \frac{7x dx}{x^2 - 8}$$

$$15) \int \frac{8x^3 - 7x^2 - 1}{2x} dx$$

$$16) \int \frac{x^2 - 5x + 2}{x - 2} dx$$

$$17) \int \frac{(\ln x)^3}{2x} dx$$

$$18) \int (e^{4x} + e) dx$$

$$19) \int 2e^x(1 + e^x)^4 dx$$

$$20) \int \frac{e^x + e^{-x}}{e^x - e^{-x}} dx$$

$$21) \int (e^x - e^{-x})^2 dx$$

$$22) \int \pi e^{\cos x} \sin x dx$$