

Solve the equation  $\ln(x+2) - \ln x = 4$  Give your answer in terms e.

$$\ln(x + 2) - \ln(x) = 4$$

Using base property of logarithm:

$$\log_b(xy) = \log_b(x) + \log_b(y).$$

Gets:

$$\ln \frac{x+2}{x} = 4$$

$$\ln \left( 1 + \frac{2}{x} \right) = 4$$

$$e^{\ln \left( 1 + \frac{2}{x} \right)} = e^4$$

$$1 + \frac{2}{x} = e^4$$

$$\boxed{x = \frac{2}{e^4 - 1}}$$

**Answer:**

$$x = \frac{2}{e^4 - 1}$$