

Pre-Calculus

KEY

Solve advanced exponential and logarithmic equations. Give the EXACT answer.

1. $x = \ln 2, \ln 3$

2. $x = \ln 6$

3. $x = 1 - \ln\left(\frac{25}{6}\right)$

4. $x = \frac{\ln\left(\frac{962}{3}\right)}{2} = \frac{1}{2} \ln\left(\frac{962}{3}\right) = \ln \sqrt{\frac{962}{3}}$

5. $x = \frac{\ln 3}{0.09}$

6. $x = \frac{\ln 8}{0.125}$

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

8. $x = \frac{e^8 + 1}{e^8 - 1}$

9. $x = \frac{3 + \sqrt{9 + 4e}}{2}$

10. $x = -2 + 2\sqrt{2}$

11. \emptyset

12. \emptyset