
Solve the following equations and be sure to check your answer(s)

1. $2\log(x+2) = 1 + \log(x^2 - 4)$

2. $1 + \log(x^2 - 9) = 2\log(x - 3)$

3. $2^{x+4} = 3^{2x-3}$

4. $\log(\sqrt[4]{10-5x})^3 = 3$

5. $\ln(9x^2 - 1) = 0$

6. $\log_2(y^{-3}) = 12$

$$7. \log(3x^2 + 4) - \log(2x - 2) = \log x + \log 4$$

$$8. \log_5(y^2 + 5y + 6) = \log_5(y + 3) + \log_5 4$$

$$9. 9^{2-x^2} = \frac{1}{3}$$

$$10. \frac{2^{x-1}}{2^{3-4x}} = 16$$

$$11. e^{1+6x} = 8$$

$$12. \log \sqrt[3]{x} = \sqrt{\log x}$$
