

Objectives

- Solve exponential and logarithmic equations and inequalities
- Solve problems involving exponential and logarithmic equations.

Vocabulary

- Exponential equation
- Logarithmic equation

Example 1

Solving Exponential Equations

a) $8^x = 2^{x+6}$

b) $5^{x-2} = 200$

Try it!

Solve and check.

a) $3^{2x} = 27$

b) $7^{-x} = 21$

c) $2^{3x} = 15$

Example 2

Solving Logarithmic Equations

a) $\log_3(x-5) = 2$

b) $\log 45x - \log 3 = 1$

c) $\log_4 x^2 = 7$

d) $\log x + \log(x+9) = 1$

Try it!

Solving Logarithmic Equations

a) $3 = \log 8 + 3 \log x$

b) $2 \log x - \log 4 = 0$