

## Two Types of Logarithmic Equations

**Type 1** (All terms are logarithms.)

- 1) Express in form:  $\log_b M = \log_b N$ .
- 2) Set arguments equal:  $M = N$
- 3) Solve for the variable.
- 4) Check each possible solutions in the original equation. All arguments must be positive.

**Type 2** (There is a number term.)

- 1) Express equation in the form:  $\log_b M = c$
- 2) Rewrite in exponential form:  $b^c = M$
- 3) Solve for the variable.
- 4) Check all possible solutions. Arguments must be positive.