Two methods to solving a logarithmic equation

Method 1: Given equation in the form...

$$\log_b x = \log_b y$$

set $x = y$ solve for variable

Method 2: Given equation in the form...

$$\log_b x = y$$

convert from logarithmic form to exponential form $x = b^y$
solve for variable

Solve the following logarithmic equations

$$\log_2 (x + 4) = \log_2 (2x - 5)$$

$$\log (x + 1) + \log 3 = \log (4x - 10)$$

Solve the following logarithmic equations

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

Solve the following logarithmic equations

$$\log_4(x - 2) = 2 \qquad\qquad \log_2(x - 3) + \log_2 4 = 5$$

Solve the following logarithmic equations

$$\log_2 x + \log_2 (x - 2) = 3$$

Two methods to solving a logarithmic equation

Method 1: Given equation in the form...
$$\log_b x = \log_b y$$
set $x = y$ solve for variable

Method 2: Given equation in the form...
$$\log_b x = y$$
convert from logarithmic form to exponential form $x = b^y$
solve for variable