

# Exponential

# Equations

$$\text{Ex: } 2^{x+3} = 131072$$

$$\log_2(2^{x+3}) = \log_2(131072)$$

$$x+3 = \log_2(131072)$$

$$x = \log_2(131072) - 3$$

$$x = 14$$

$$\text{Ex: } \frac{2(3^x)}{2} = \frac{50}{2}$$

$$3^x = 25$$

$$\log_3 3^x = \log_3 25$$

$$x = \log_3(25)$$

$$x = 2.93$$

$$\text{Ex: } \frac{2.5(0.85)^{x-2}}{2.5} = \frac{1}{2.5}$$

$$(0.85)^{x-2} = 0.2$$

$$\log_{0.85}(0.85)^{x-2} = \log_{0.85}(0.2)$$

$$x-2 = \log_{0.85}(0.2) + 2$$

$$x = \log_{0.85}(0.2) + 2$$

$$x = 11.9$$