



## Precalculus: Logarithmic and Exponential Equations

Name \_\_\_\_\_

Date \_\_\_\_\_

Solve each equation for the variable.

(1)  $22 \cdot (1,49)^{3t-6} = 76$

(2)  $75 \cdot (1,37)^{5t-7} = 77$

(3)  $10 + 13 \cdot 2^{3x-10} = 52$

(4)  $192 + 3 \cdot 2^{2x+4} = 384$

(5)  $5 \cdot e^{t+9} = 10$

(6)  $43 \cdot e^{5t+3} = 254$

(7)  $4 \cdot e^{4t+1} = 109$

(8)  $81 \cdot (1,16)^{3t+5} = 137$

(9)  $66 \cdot (1,28)^{3t-9} = 54$

(10)  $65 \cdot (1,31)^{5t-7} = 13$

(11)  $59 \cdot (1,17)^{4t} = 299$

(12)  $34 \cdot e^{3t-5} = 205$



## Answers

Solve each equation for the variable.

$$(1) \quad 22 \cdot (1,49)^{3t-6} = 76$$

$$t = 3,04$$

$$(3) \quad 10 + 13 \cdot 2^{3x-10} = 52$$

$$x = 3,90$$

$$(5) \quad 5 \cdot e^{t+9} = 10$$

$$t = -8,31$$

$$(7) \quad 4 \cdot e^{4t+1} = 109$$

$$t = 0,58$$

$$(9) \quad 66 \cdot (1,28)^{3t-9} = 54$$

$$t = 2,73$$

$$(11) \quad 59 \cdot (1,17)^{4t} = 299$$

$$t = 2,58$$

$$(2) \quad 75 \cdot (1,37)^{5t-7} = 77$$

$$t = 1,42$$

$$(4) \quad 192 + 3 \cdot 2^{2x+4} = 384$$

$$x = 1,00$$

$$(6) \quad 43 \cdot e^{5t+3} = 254$$

$$t = -0,24$$

$$(8) \quad 81 \cdot (1,16)^{3t+5} = 137$$

$$t = -0,49$$

$$(10) \quad 65 \cdot (1,31)^{5t-7} = 13$$

$$t = 0,21$$

$$(12) \quad 34 \cdot e^{3t-5} = 205$$

$$t = 2,27$$