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# Algebra 1

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Relays

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## One-Step Equations

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$$11 + x = 3$$

$$y/9 = -3$$

$$x - 5 = 5$$

$$y + 57 = 357$$

$$4x = 12$$

$$y/6 = 3.5$$

$$x - 11 = 100$$

$$8y = 2$$

$$x = -8$$

$$x = 10$$

$$x = 3$$

$$x = 111$$

$$y = -27$$

$$y = 300$$

$$y = 21$$

$$y = 1/4$$

## Two-Step Equations

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$$11x - 4 = 7$$

$$z/9 + 2 = 0$$

$$9 - x = 20$$

$$99z + 1 = 100$$

$$2/13 \cdot x = 2$$

$$6z - 14 = 7$$

$$11 - 2x = 21$$

$$(z-1)/11 = 5$$

x=1  
x= -11  
x=13  
x= -5

z= -18  
z=1  
z=21/6 = 7/2  
z=56

## Multi-Step Equations

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$$7x - 2x + 1 = 11$$

$$19a - 3 = 4a + 22$$

$$9x - 3 = 4x - 18$$

$$8s - 64 = 0$$

$$5x = 4x - 1$$

$$y/2 - y/4 = -3$$

$$9x = 3x$$

$$30y - 7 + 10y = 3$$

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x=2  
x= -3  
x= -1  
x=0

a=5/3  
s=8  
y= -12  
y= 10/40= 1/4

## Mixed Equations (With Identities and No Solutions)

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$$7(y-1) = 6(y-1)$$

$$5x + 1 = 3x + 1$$

$$4x + 1 = 2x + 2x - 1$$

$$2\sqrt[2]{9} + \sqrt[3]{3} = 5$$

$$3(4s - 1) = 12s - 3$$

$$t - 13 = t + 13$$

$$9(x - 1) = 3(x - 1)$$

$$(p - 4)^{(1/4)} = p/4 - 1$$

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y=1  
no solution  
identity  
x=1

x=0  
v=9  
no solution  
identity

## Relay Grab Bag

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$$y - 3 = 2y$$

$$2(x - 4) = 14 - x$$

$$r - 5 = 17$$

$$5y - 13 = 12$$

$$-5x + 18 = 3$$

$$3x + 11 - 4x = 19$$

$$14 - x = x$$

$$37c - 22 = 22c - 37$$

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y = -3  
r = 22  
x = 3  
x = 7

x = 22/3  
y = 5  
x = -8  
c = -1

## Relay Grab Bag

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$$10r + 33r = 1$$

$$14x = 12(2x - 10)$$

$$x - 17 = -27$$

$$5d - 105 = 0$$

$$1 - x + 18 = -23$$

$$3x - 7 = 4x$$

$$\left(\frac{1}{2}\right)(4t + 1) = t$$

$$4v = 2(2v - 11) + 22$$

r = 1/43  
x = -10  
x = 42  
t = -1/2

x = 12  
d = 21  
x = -7  
identity