

Do Now

1 Solve each of the following one-step equations.

a $x + 11 = 17$

d $h + 5 = 13$

g $m - 5 = 11$

j $k - 4 = 9$

m $5y = 40$

p $7a = 84$

s $\frac{f}{4} = 13$

v $\frac{v}{3} = 7$

b $t + 8 = 15$

e $26 + d = 32$

h $c - 9 = 17$

k $a - 16 = 30$

n $3z = 48$

q $84 = 12m$

t $\frac{k}{10} = 9$

w $3 = \frac{y}{12}$

c $w + 9 = 21$

f $31 + q = 47$

i $l - 13 = 29$

l $b - 22 = 36$

o $11p = 55$

r $63 = 9z$

u $\frac{s}{6} = 10$

x $4 = \frac{n}{17}$

Check your answers

Exercise 13C

1 **a** $x = 6$

d $h = 8$

g $m = 16$

j $k = 13$

m $y = 8$

p $a = 12$

s $f = 52$

v $v = 21$

b $t = 7$

e $d = 6$

h $c = 26$

k $a = 46$

n $z = 16$

q $m = 7$

t $k = 90$

w $y = 36$

c $w = 12$

f $q = 16$

i $l = 42$

l $b = 58$

o $p = 5$

r $z = 7$

u $s = 60$

x $n = 68$

Walt solve equations involving fractions

Success Criteria I know I need to solve for the value of a variable.

I know opposite operations of multiplication and division, addition and subtraction.

[View the video](#)

Solve the following two-step equations.

a $\frac{3x}{4} = 8$

b $-\frac{2}{5}y = 11$

a $\frac{3x}{4} = 8$

$4 \times \frac{3x}{4} = 8 \times 4$

Multiply both sides by 4.

Multiply each side of the equation by the denominator. 

$3x = 32$

$\frac{3x}{3} = \frac{32}{3}$

Divide both sides by 3.

$x = 10\frac{2}{3}$

Check: LHS = $\frac{3x}{4}$

$= 3 \times \frac{10\frac{2}{3}}{4} = \frac{3 \times \frac{32}{3}}{4} = \frac{32}{4} = 8$

\therefore LHS = RHS

b $-\frac{2}{5}y = 11$

$5 \times -\frac{2}{5}y = 11 \times 5$

Multiply both sides by 5.

$\therefore -2y = 55$

$\frac{-2y}{-2} = \frac{55}{-2}$

Divide both sides by -2 .

$y = -27\frac{1}{2}$

Check: LHS = $-\frac{2}{5}y$

$= -\frac{2}{5} \times -27\frac{1}{2} = -\frac{2}{5} \times -\frac{55}{2} = 11$

\therefore LHS = RHS

a $\frac{2x}{3} = 2$

b $\frac{5d}{6} = 4$

c $\frac{4a}{7} = 3$

d $\frac{8p}{6} = 5$

e $\frac{6k}{11} = -9$

f $\frac{7l}{9} = -6$

g $\frac{10q}{13} = -2$

h $\frac{3m}{5} = -8$

i $\frac{5}{8}t = 7$

j $\frac{9}{11}x = 3$

k $\frac{8}{9}y = 4$

l $\frac{4}{7}n = 7$

m $-\frac{9}{10}a = 8$

n $-\frac{2}{5}w = 6$

o $-\frac{10}{11}f = 5$

p $-\frac{7}{8}c = 9$

Solve the following equations.

a $\frac{p-6}{4} = 5$

b $\frac{2d+8}{3} = 7$

a $\frac{p-6}{4} = 5$

$4 \times \frac{p-6}{4} = 5 \times 4$

Multiply both sides by 4.

$p-6 = 20$

$p-6+6 = 20+6$

Add 6 to both sides.

$\therefore p = 26$

Check: LHS = $\frac{p-6}{4} = \frac{26-6}{4} = \frac{20}{4} = 5$

\therefore LHS = RHS

b $\frac{2d+8}{3} = 7$

$3 \times \frac{2d+8}{3} = 7 \times 3$

Multiply both sides by 3.

$2d+8 = 21$

$2d+8-8 = 21-8$

Subtract 8 from both sides.

$2d = 13$


$\frac{2d}{2} = \frac{13}{2}$

Divide both sides by 2.

$\therefore d = 6\frac{1}{2}$

Check: LHS = $\frac{2d+8}{3} = \frac{2 \times 6\frac{1}{2} + 8}{3} = \frac{13+8}{3} = \frac{21}{3} = 7$

\therefore LHS = RHS

Notice that there are two parts to these equations. 

7 Solve the following equations.

a $\frac{x+7}{5} = 6$

b $\frac{p+3}{7} = 4$

c $\frac{d+5}{2} = 9$

d $\frac{c-4}{3} = 11$

e $\frac{y-9}{4} = 8$

f $\frac{a-10}{6} = 2$

g $\frac{4b+2}{2} = 5$

h $\frac{2m+6}{4} = 7$

i $\frac{5n+8}{3} = 11$

j $\frac{5k-1}{9} = 6$

k $\frac{7c-3}{6} = 3$

l $\frac{9w-3}{5} = 12$

m $\frac{d+9}{5} = -3$

n $\frac{3m-7}{8} = -2$

o $\frac{5-2d}{7} = -3$

p $\frac{7-3d}{5} = -7$

q $\frac{3x+1}{-5} = 10$

r $\frac{5x-11}{-4} = -1$

s $\frac{8-3x}{5} = -2$

t $\frac{4p-5}{-3} = -5$