

MasterMath

Name _____
Date _____

Solving Equations with Variables on Both Sides

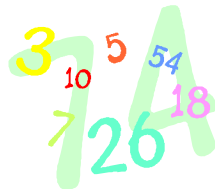
1. Did I move the variable and constants correctly?

Before	After	correct?
$3x - 7 = 5x + 2$	$3x + 5x = 7 - 2$	no
$6z + 2z = 36 - 10z$	$-2z = 36$	no
$24 - 5a = 6 + 3a$	$18 = 8a$	yes
$w - 24 = 16 + 2w$	$-w = 40$	yes
$24b - 16 = -12b + 6$	$12b = -10$	no
$189 - \frac{1}{3}f = 190 + 4f$	$-4\frac{1}{3}f = 1$	yes
$46z + 4z - 8 = 5z$	$45z = 8$	yes
$16x - 5 = 5 - 16x$	$-10 = -32x$	yes
$8 - 4y = 5 - 6y$	$-2y = -3$	no
$x + 16 = 32 - 4x$	$5x = 16$	yes

2. Solve the equations. Check your solutions.

Equation	Solution
$16 - 2x = 14$	$x = 1$
$14 - 6x = 6x - 14$	$x = 2\frac{1}{3}$
$5x - 12 = 4x + 6$	$x = 18$
$3(x + 2) = 4x + 8$	$x = -2$
$6(1.5x + 2.5) = 24$	$x = 1$
$7(2x + 2) = 4x$	$x = -1.4$

3. If we subtract 6 from a number multiplied by 2, it equals the number times 4. What is the number?



-3.0

4. Thirty-six 7th graders are at the dance. There are 4 more girls than boys. How many boys are at the dance? How many girls?



Equation	Boys	Girls
$b + b + 4 = 36$	16	20

- 5.

Your grandfather leaves his house and rides his bike to your house, averaging a speed of 9 MPH. You leave your house and ride your bike to your grandfathers averaging 11 MPH. It takes your grandfather .75 hours longer to get to your house than it takes you to get to his. How long did it take you to get to your grandfathers (t)? (Hint: Speed x Time = Distance.)

Equation	Solution
$9(t + .75) = 11t$	$t = 3$