

Lesson #4

Solving Equations With Variables on Both Sides

Some equations have variables on both sides.

$$73 - 5x = 7x - 11$$

$$-7(2 - m) = 3m + 4$$

$$-7a = -12a - 65$$

The strategy for solving such equations is to collect _____
_____ on the same side. Collect variables on the side with the
greater variable coefficient.

Example 1:

$$3x - 1 = 2x + 4$$

$$3x - 1 \boxed{} = 2x + 4 \boxed{}$$

$$\boxed{} - 1 = \boxed{} + 4$$

Step 1: Find the smaller variable term.

Step 2: Add or subtract the smaller variable term from/to both sides.

Step 3: Combine like terms.

Step 4: Use inverse operations to solve for the variable.

Step 5: Substitute the solution into the original equation to check!

Example 2:

$$-5x - 8 = -7x + 6$$

$$-5x - 8 \boxed{} = -7x + 6 \boxed{}$$

$$\boxed{} - 8 = \boxed{} + 6$$

Step 1: Find the smaller variable term.

Step 2: Add or subtract the smaller variable term from/to both sides.

Step 3: Combine like terms.

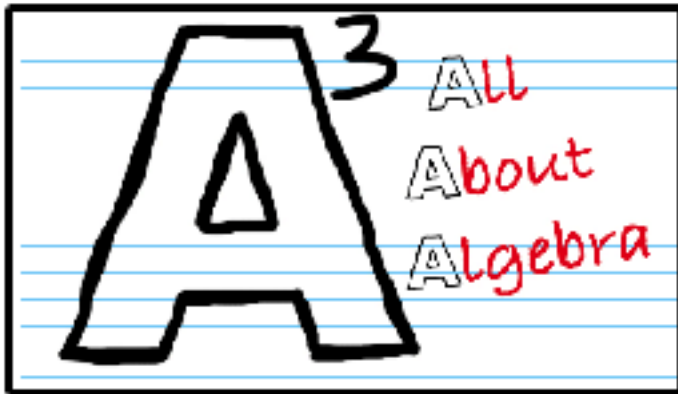
Step 4: Use inverse operations to solve for the variable.

Step 5: Substitute the solution into the original equation to check!

Practice!

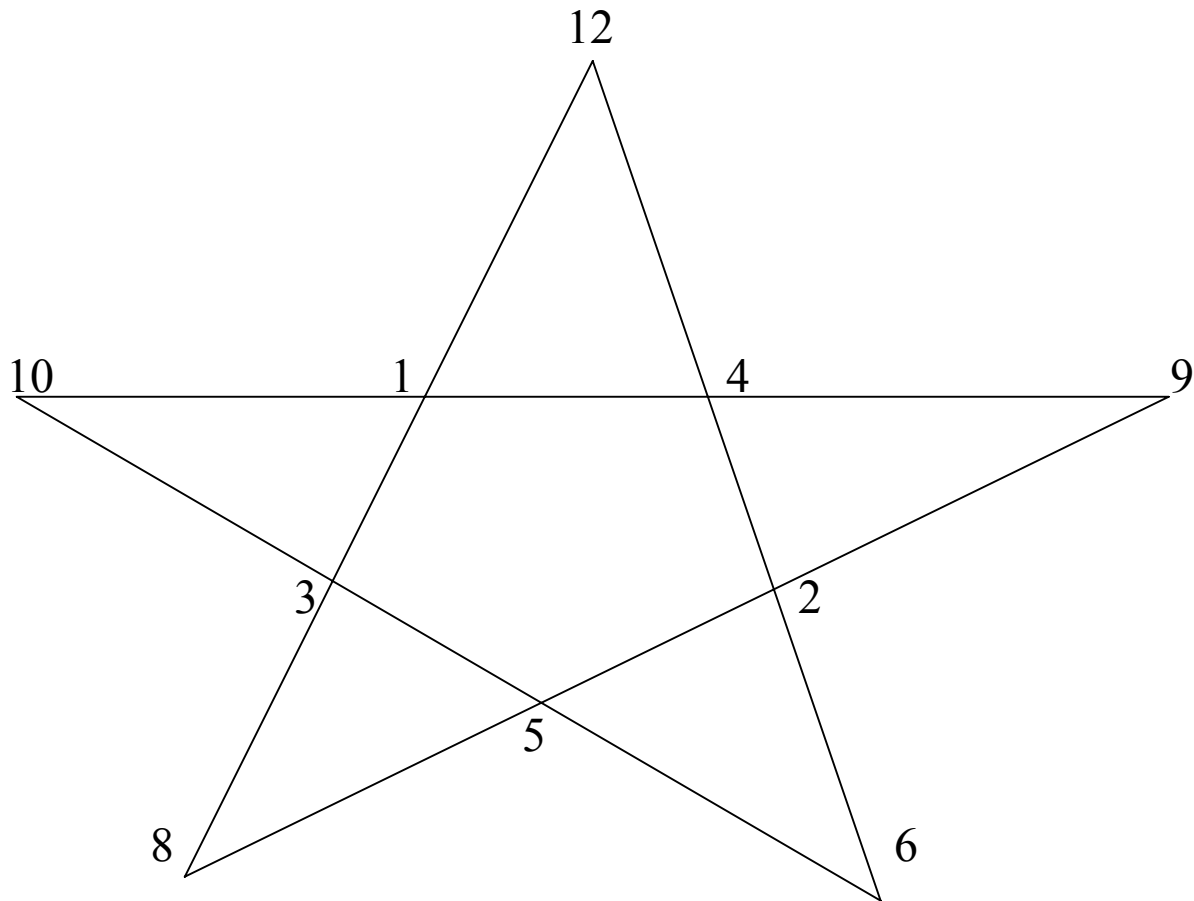
1. $-3x - 4 = 4x + 10$

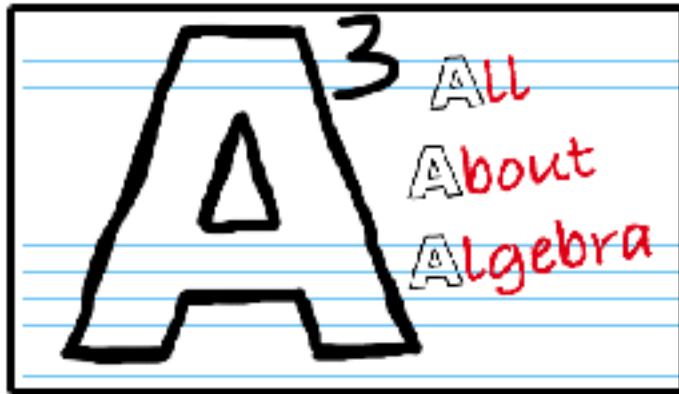
2. $7x - 3 = 19 + 5x$



Just for FUN!

Place the integers 1, 2, 3, 4, 5, 6, 8, 9, 10 and 12 (7 and 11 are not included) at the intersection of the line segments so that the sum on any line equals the sum on any other line.





Just for FUN!

Who plays what?

Travis, Tom, David, Kathy and Sherry all go to Clinton High School. Each has won an award for either volleyball, basketball, skiing, football, or karate. Football is an all male sport at CHS, while volleyball is an all female sport at CHS. David's and Sherry's sports do not require a ball, but Travis' sport does. The karate student just won third place in her division. Tom plays his sport indoors. Match each student with their after-school sport.

A^3 - All About Algebra, L. McLean 2005