Steps to solving an equation

1) Decide which side of the equal sign you want the variable to be on.

2) Get all of the variables on one side of the equation (by adding or subtracting one of the variables). It doesn't really matter which side, but solving is easier if you end up with a positive coefficient.

3) Eliminate the constant. Get all of the constants (numbers) on the other side of the equation (by adding or subtracting).

4) Divide both sides by the coefficient, and make sure you give a reduced answer.

5) Check your solution.

Example:

$$-3a - 42 = 12a + 18$$
$$+3a \qquad +3a$$

Get all the variables on one side.

$$-42 = 15a + 18$$
$$-18 \qquad -18$$

Eliminate the constant.

$$-60 = 15a$$
$$\div 15 \quad \div 15$$

Divide both sides by the coefficient.

$$-4 = a$$

Steps to checking a solution

1) Rewrite the original equation.

2) Substitute in the solution for the variable.

3) Simplify each side of the equation.

4) Your solution is correct if both sides of the equation are equal.

Example:

$$-3a - 42 = 12a + 18$$ **Rewrite original equation.**

$$-3(-4) - 42 = 12(-4) + 18$$ **Substitute in solution.**

$$12 - 42 = -48 + 18$$ **Simplify**

$$-30 = -30$$ $\sqrt{}$ **Equation is balanced, solution correct!**

Solve and check your answers using proper format.

1. $10x + 5 = 6x - 15$

2. $6 = 18 - 3x$

3. $8x + 36 = 3x - 14$

4. $5x - 7 = 7x - 9$

5. $5x - 26 = 18x$

6. $12x - 18 = 13x + 18$

7. $4x - 5 = 5x - 5$

8. $4x + 4 = 2x + 36$