

Warm Up Grade 8



solve using tiles

$$a) x + 3 = 15$$

$$x + 3 = 15$$



~~_____~~ | : : : : : : $x = 12$

Write an equation and solve using algebra tiles

a) Four times a number decreased by 7 is 29

$$4x - 7 = 29$$

The diagram illustrates a sequence of shapes on the left and a sequence of dots on the right, separated by a vertical line.

Left Side:

- Four horizontal black bars.
- A series of six pairs of circles. Each pair consists of a black circle and a green circle.

Right Side:

- A sequence of black dots arranged in three rows of five dots each, followed by a row of four dots.

$$4x - 7 + 7 = 29 + 7$$

$$4x = 36$$

A hand-drawn diagram consisting of four horizontal rows. The first row has three black rectangular blocks. The second, third, and fourth rows each have two black rectangular blocks. A vertical red line is positioned to the left of the first row, and a horizontal red line is at the top of the diagram. Green dots are scattered across the rows.

$$x = 9$$

 | ...

$$3x + 9 = 30$$

$$3x + \cancel{9-9} = \underbrace{30-9}$$

$$\begin{array}{rcl} 3x & = & 21 \\ \div 3 & & \div 3 \end{array}$$

$$x = 7$$

$$4 - 2x = 28$$

~~$$4 - 2x = 28 - 4$$~~

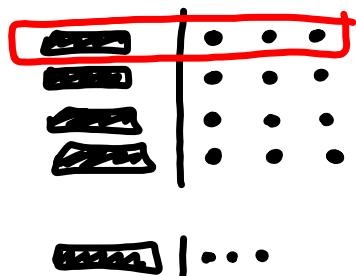
$$\begin{array}{rcl} -2x &=& 24 \\ \div(-2) && \div(-2) \end{array}$$

$$x = -12$$

Your Turn

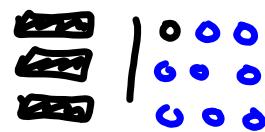
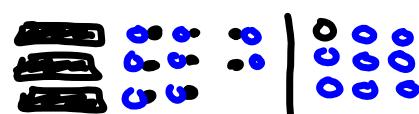
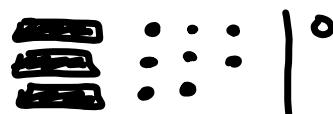
Solve using tiles

a) $4x = 12$



$$\begin{array}{rcl} 4x & = & 12 \\ \div 4 & & \div 4 \\ x & = & 3 \end{array}$$

b) $3x + 8 = -1$



$$3x + 8 - 8 = -1 - 8$$

$$\begin{array}{rcl} 3x & = & -9 \\ \div 3 & & \div 3 \end{array}$$

$$x = -3$$

Solving Equations using Algebra We will do on Wednesday

When we solve equations using algebra, the first thing we want to do is to "isolate" the variable. That is we want to get the variable by itself on one side of the equal sign.

To isolate the variable and solve the equation, we use opposite operations:

Addition	opposite	Subtraction
Subtraction	opposite	Addition
Multiplication	opposite	Division
Division	opposite	Multiplication

Remember whatever you do to one side of the equation you MUST do the other side.

Examples:

$$2x + 4 = 20$$



Class / Homework

Page 324 #5, 6, 7 Use tiles

5 a b c d
 \downarrow \downarrow \downarrow \downarrow
 alg tiles alg alg

6 a b c d
 \downarrow \quad \quad \quad
 tiles algebra

7 Algebra
 a b