

### Solving Equations

To solve an equation means to find a value for the variable(letter)

Isolate - When solving equations isolate means to use the opposite operations to get the variable(letter) alone on one side of the equal sign.

The x is isolated in the following:

$$x = 5$$

Mar 31-9:38 AM

One -Step Equations - Use the opposite operation

$$x - 3 = 4$$

Add 3 to both sides

$$x - \cancel{3} + \cancel{3} = 4 + 3$$

$$x = 7$$

Mar 31-9:41 AM

$$x - 3 = 4$$

Tiles

May 10-2:36 PM

$$x + 2 = 5$$

subtract 2 from both sides

$$x + 2 - 2 = 5 - 2$$

$$x = 3$$

Apr 5-8:58 PM

$$x + 2 = 5$$

May 10-2:36 PM

$$4a = 12$$

Divide both sides by 4

$$\frac{4a}{4} = \frac{12}{4}$$

$$1a = 3$$

or

$$a = 3$$

Apr 5-8:57 PM

$4a = 12$

$-x^2$     $x^2$     $-x$     $x$

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$\frac{x}{5} = 4$

Multiply both sides by 5

$5 \times \frac{x}{5} = 4 \times 5$

$1x = 20$

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Two Step Equations -

$2x - 3 = 1$

1 add 3 to both sides

2 divide both sides by 2 solve for x

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

$\frac{2x}{2} = \frac{4}{2}$

$1x = 2$

Mar 31-9:50 AM

$2x - 3 = 1$

$-x^2$     $x^2$     $-x$     $x$

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$2x + 4 = 12$

Steps

1) subtract 4

2) divide by 2

3) Solve for x

$2x + 4 - 4 = 12 - 4$

$\frac{2x}{2} = \frac{8}{2}$

$x = 4$

Mar 31-9:45 AM

$2x + 4 = 12$

$-x^2$     $x^2$     $-x$     $x$

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$$\frac{x}{3} + 4 = 6$$

Steps

$$\frac{x}{3} + 4 - 4 = 6 - 4$$

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

$$1x = 6$$

- 1) Sub 4
- 2) mult. by 3
- 3)

Apr 5-9:04 PM

$$\frac{x}{3} - 2 = 6$$

Steps

- 1)
- 2)
- 3)

Apr 5-9:04 PM

Assignment

Page

Mar 31-9:58 AM

Try

- ①  $3x = 15$   
 $\cancel{3}x = \frac{15}{\cancel{3}}$   
 $1x = 5$
- ②  $4 \times \frac{x}{4} = 3 \times 4$   
 $1x = 12$
- ③  $x - 5 = 12$   
 $x - \cancel{5} + \cancel{5} = 12 + 5$   
 $x = 17$
- ④  $x + 3 = 7$   
 $x + 3 - 3 = 7 - 3$   
 $x = 4$

Apr 6-2:05 PM

$$4x + 5 = 21$$

$$4x + 5 - 5 = 21 - 5$$

$$\frac{4x}{4} = \frac{16}{4}$$

$$1x = 4$$

- 1) sub 5
- 2) divide 4

Apr 6-2:14 PM

Assignment 1 - For Marks

Due Thur

- 1)  $x - 8 = 12$   
 $x - 8 + 8 = 12 + 8$   
 $x = 20$

Apr 6-2:16 PM

$$20 + p = -5$$

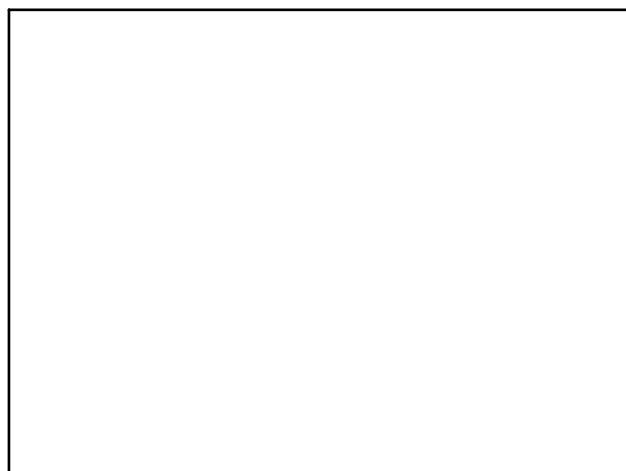
1) Sub 20

$$20 - 20 + p = -5 + (-20)$$
$$p = -5 - 20$$
$$p = -25$$

Apr 6-2:20 PM

$$3) 16 = 4 + x \text{ or } x + 4 = 16$$
$$4) 16 = m - 13 \text{ or } m - 13 = 16$$

Apr 6-2:23 PM



Apr 6-2:27 PM