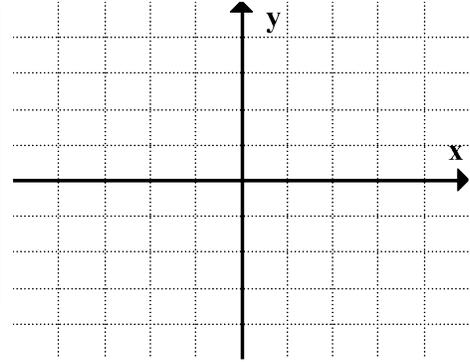


# C11 - 4.1 - x-intercepts $x^2 + bx + c$ "a = 1" WS

Factor the following, set  $y = 0$ , and set your brackets equal to zero separately and solve. Then sketch a graph and label the x - intercepts

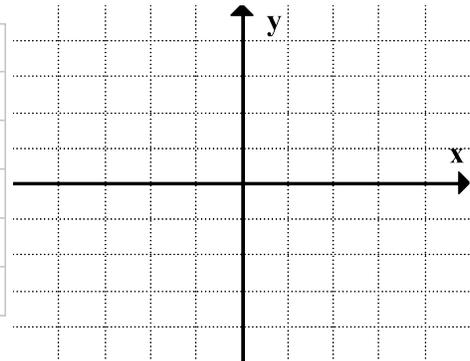
$y = x^2 + 5x - 6$            X        =  
       +        =

x	y



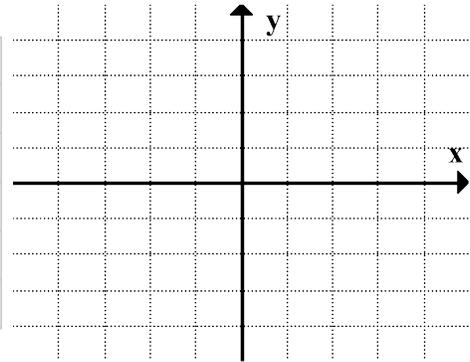
$y = x^2 + 6x + 8$            X        =  
       +        =

x	y



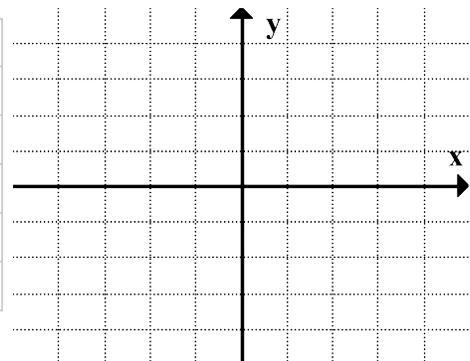
$y = x^2 + 3x - 4$            X        =  
       +        =

x	y



$y = x^2 - 4x - 5$            X        =  
       +        =

x	y



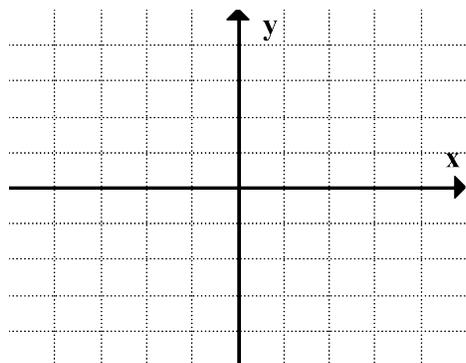
# C11 - 4.1 - x-intercepts $x^2 + bx + c$ "a = 1" WS

Factor the following, set  $y = 0$ , and set your brackets equal to zero seperately and solve. Then sketch a graph and label the x - inercepts

$$y = x^2 + 7x + 12 \quad \underline{\hspace{1cm}} x \underline{\hspace{1cm}} =$$

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} =$$

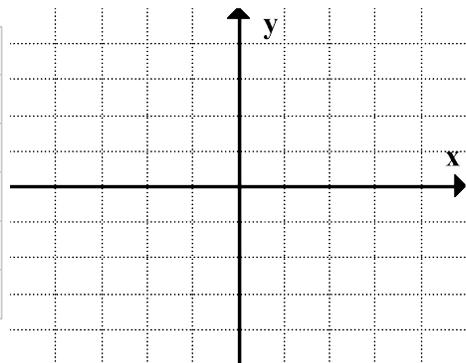
x	y



$$y = x^2 + 4x + 3 \quad \underline{\hspace{1cm}} x \underline{\hspace{1cm}} =$$

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} =$$

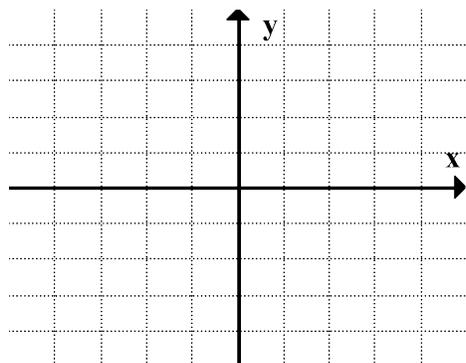
x	y



$$y = x^2 - 3x - 4 \quad \underline{\hspace{1cm}} x \underline{\hspace{1cm}} =$$

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} =$$

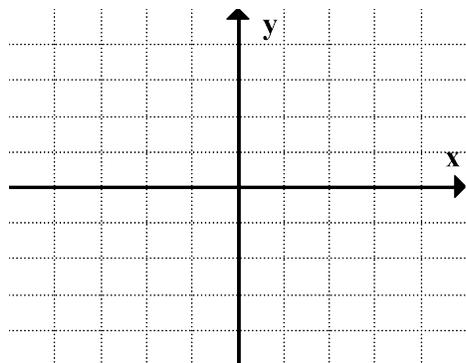
x	y



$$y = x^2 + 4x - 5 \quad \underline{\hspace{1cm}} x \underline{\hspace{1cm}} =$$

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} =$$

x	y

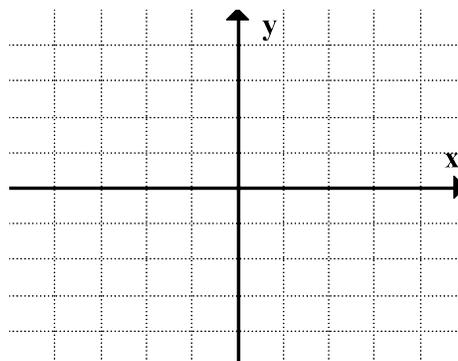


# C11 - 4.1 - x-intercepts " $x^2 + bx + c, c = 0$ " WS

Factor the following, set  $y = 0$ , and set your Factors equal to zero seperately and solve. Then sketch a graph and label the x - inercepts

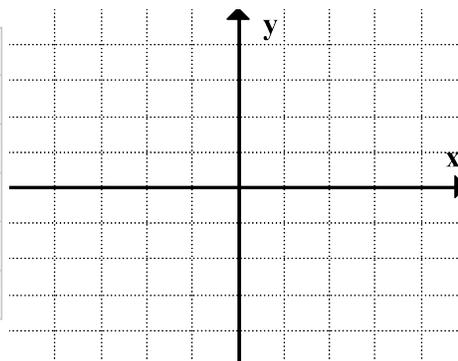
$$y = x^2 + 2x$$

x	y



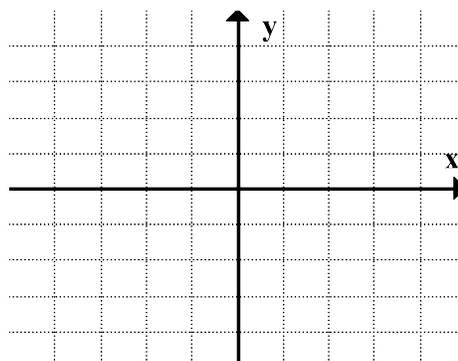
$$y = x^2 - 3x$$

x	y



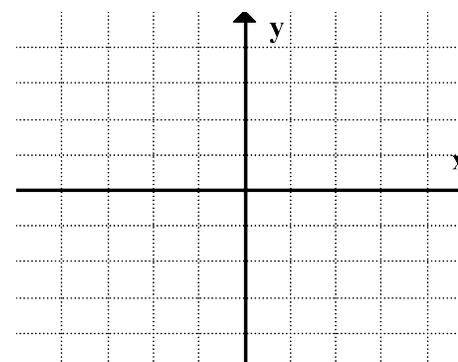
$$y = -x^2 - 5x$$

x	y



$$y = 2x^2 + 6x$$

x	y



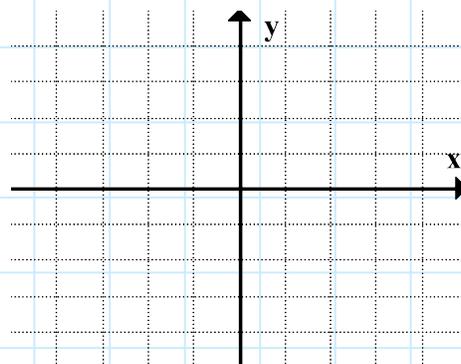
# C11 - 4.1 - x-intercepts $ax^2 + bx + c$ "a $\neq 1$ " WS

Factor the following, set  $y = 0$ , and set your brackets equal to zero separately and solve. Then sketch a graph and label the x-intercepts

$$y = 2x^2 + 7x + 6$$

$$\begin{array}{l} \underline{\quad} x \underline{\quad} = \\ \underline{\quad} + \underline{\quad} = \end{array}$$

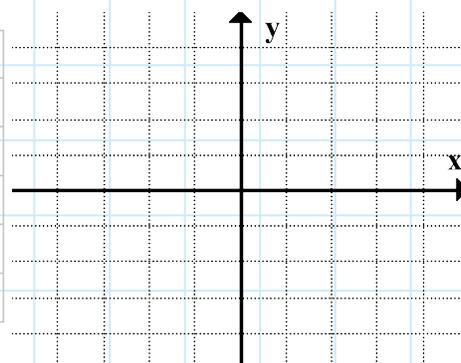
x	y



$$y = 2x^2 - 3x - 2$$

$$\begin{array}{l} \underline{\quad} x \underline{\quad} = \\ \underline{\quad} + \underline{\quad} = \end{array}$$

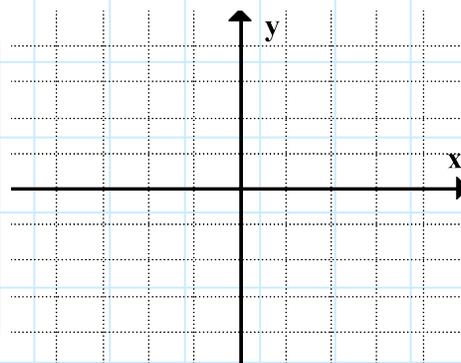
x	y



$$y = 2x^2 + 3x - 9$$

$$\begin{array}{l} \underline{\quad} x \underline{\quad} = \\ \underline{\quad} + \underline{\quad} = \end{array}$$

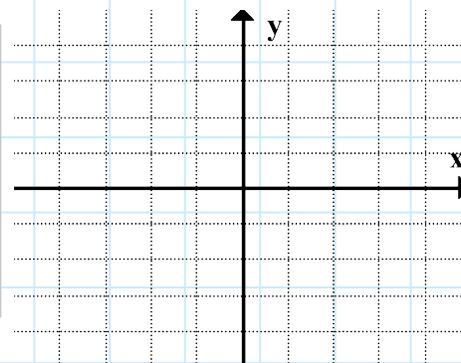
x	y



$$y = 3x^2 - 5x + 2$$

$$\begin{array}{l} \underline{\quad} x \underline{\quad} = \\ \underline{\quad} + \underline{\quad} = \end{array}$$

x	y

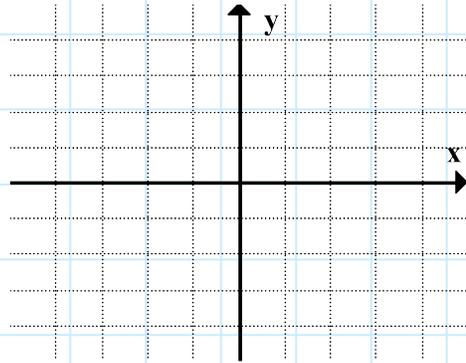


# C11 - 4.1 - x-intercepts $x^2$ - # WS

Factor the following, set  $y = 0$ , and set your brackets equal to zero seperaely and solve. Then sketch a graph and label the  $x$  - intercepts

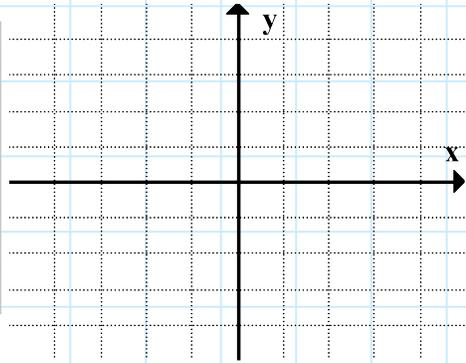
$$y = x^2 - 1$$

$x$	$y$



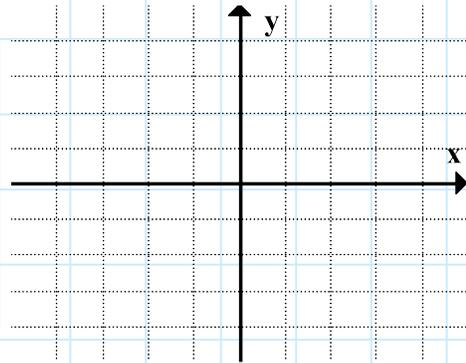
$$y = x^2 - 25$$

$x$	$y$



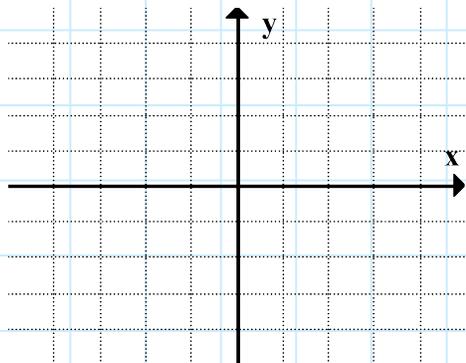
$$y = 4 - x^2$$

$x$	$y$



$$y = x^2 + 1$$

$x$	$y$

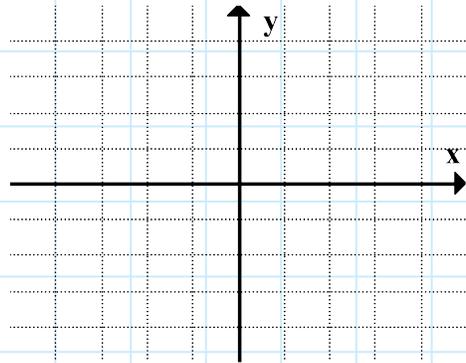


# C11 - 4.1 - x-intercepts $x^2$ - # WS

Factor the following, set  $y = 0$ , and set your brackets equal to zero seperaely and solve. Then sketch a graph and label the  $x$  - intercepts

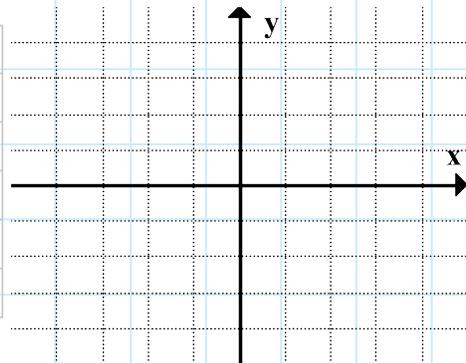
$$y = -x^2 + 9$$

$x$	$y$



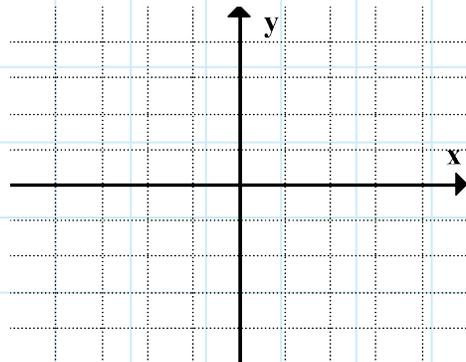
$$y = 9x^2 - 4$$

$x$	$y$



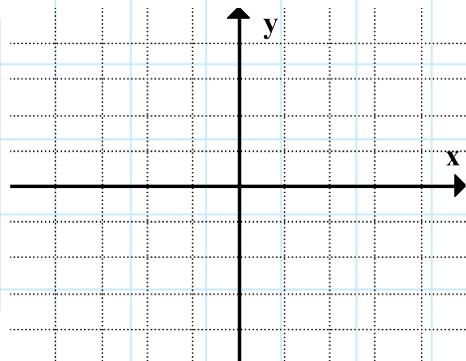
$$y = 9 - 4x^2$$

$x$	$y$



$$y = 4x^2 + 4$$

$x$	$y$

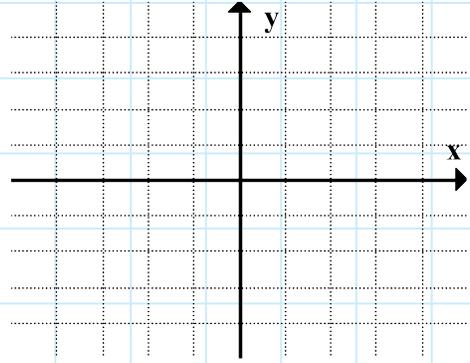


# C11 - 4.1 - Graphing Factored Form TOV WS ( $a \neq 1$ )

Graph the following equations using a table of values.

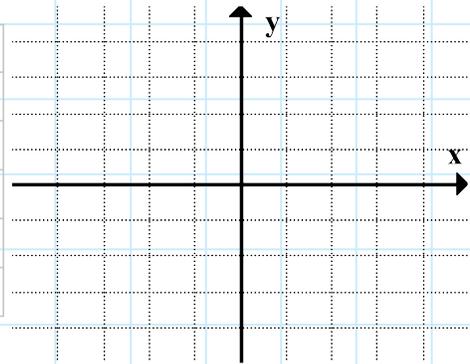
$$y = 2(x - 1)(x - 3)$$

$x$	$y$



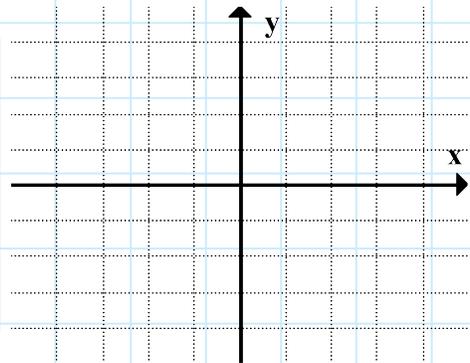
$$y = 3(x + 2)(x + 4)$$

$x$	$y$



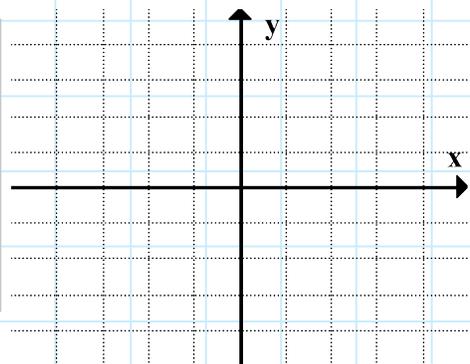
$$y = -2(x - 1)(x - 5)$$

$x$	$y$



$$y = \frac{1}{2}(x + 2)(x + 6)$$

$x$	$y$



## C11 - 4.2 - Find Equation in Standard Form HW

*Find equation in Standard Form*

$$x - int = 1 \text{ and } 5$$
$$a = 1$$

$$x - int = 1 \text{ and } 5$$
$$(3, -8)$$

$$x - int = -3 \text{ and } 1$$
$$a = 2$$

$$x - int = 2 \text{ and } 4$$
$$a = \frac{1}{2}$$

$$x - int = 2 \text{ and } 4$$
$$(0, 4)$$

Factored form, with fractions

$$x - int = \frac{1}{2} \text{ and } \frac{9}{2}$$

Standard form, no fractions

$$x - int = \frac{1}{2} \text{ and } \frac{9}{2}$$

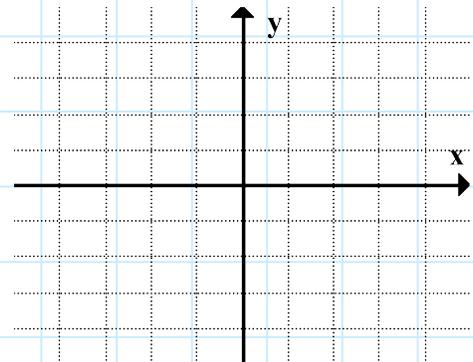
# C11 - 4.3 - Solve by TOV/Calc/Fact/Square Root/Quad Form HW

$$y = x^2 - 4x + 3$$

Factor. Set  $y = 0$ . Solve for  $x$  – intercepts.

Graph using a TOV or your Calculator

$x$	$y$



Set  $y = 0$ , complete the square, add or subtract, possibly divide, square root both sides, dont forget about  $\pm$ , add or subtract to solve.

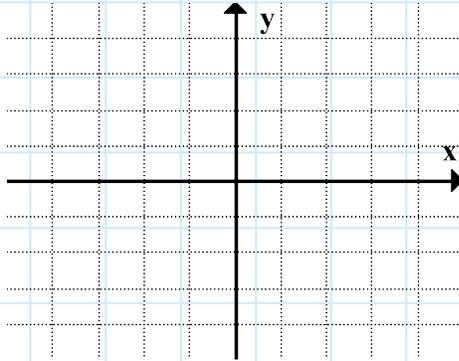
Solve for  $x$  – intercepts using quadratic formula

## C11 - 4.3 - Solve by Completing the Square HW

Set  $y = 0$ , complete the square, add or subtract, possibly divide, square root both sides, dont forget about  $\pm$ , add or subtract to solve.

$$y = x^2 - 6x + 5$$

$$y = x^2 - 8x + 15$$



$$y = x^2 - 10x + 24$$

$$y = x^2 + 4x - 5$$

$$y = x^2 - 10x + 16$$

$$y = 2x^2 - 8x - 13$$

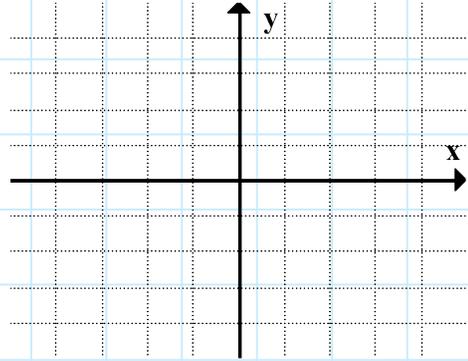
$$y = -3x^2 + 12x + 8$$

$$y = 2x^2 + 6x - 9$$

## C11 - 4.4 - Solve by Quadratic Formula HW

*Solve for x – intercepts using quadratic formula*

$$y = x^2 - 6x + 5$$



$$y = x^2 - 10x + 24$$

$$y = x^2 - 10x + 16$$

$$y = x^2 + 4x - 5$$

$$y = x^2 - 8x + 15$$

$$y = 2x^2 + 6x - 9$$

$$y = -3x^2 + 12x + 8$$

$$y = 2x^2 - 8x + 13$$

## C11 - 4.5 - Discriminant HW

Find the number of x-intercepts using the discriminant:  $b^2 - 4ac$

$$y = x^2 - 4x + 5$$

$$y = x^2 - 16$$

$$y = x^2 + 6x + 8$$

$$y = x^2 - 8x + 16$$

$$y = x^2 + 4x$$

$$y = x^2 - 2x - 24$$

$$y = x^2 - 4x + 5$$

$$y = -x^2 + 4x - 5$$

## C11 - 4.6 - Rectangular Garden

A rectangular garden has an area of 48 and a perimeter of 28. What are the lengths and widths?

A rectangular garden has an area of 56 and a perimeter of 30. What are the lengths and widths?

# C11 - 4.7 - Quadratic Word Problems

The sum of a number and its square is six. Find the number.

Let  $x = 1st \#$

$$\begin{aligned}x + x^2 &= 6 \\x^2 + x - 6 &= 0 \\(x - 2)(x + 3) &= 0\end{aligned}$$

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

$$\frac{-2}{-2} + \frac{3}{3} = 1$$

$$x - 2 = 0$$

$$x = 2$$

$$\begin{aligned}x + x^2 &= 6 \\2 + 2^2 &= 6 \\6 &= 6\end{aligned}$$



$$x + 3 = 0$$

$$x = -3$$

$$\begin{aligned}x + x^2 &= 6 \\-3 + (-3)^2 &= 6 \\-3 + 9 &= 6 \\6 &= 6\end{aligned}$$



The difference of a number and its square is 30. Find the number. \*Tricky

Find two numbers who sum to 5 and multiply to 6. Find the numbers.

## C11 - 4.7 - Quadratic Word Problems

Find two consecutive integers whose product is 156.

The product of two consecutive odd integers is 35. Find the numbers.

The sum of the squares of two consecutive integers is 61. Find the numbers.

The difference of squares of two consecutive odd numbers is  $-24$ . Find the numbers.

## C11 - 4.8 - Max Height/Total Distance

The height vs distance of a bow and arrow shot off a cliff is represented by following equation:

$$h = -2d^2 + 8d + 10$$

What is the maximum height and the distance it took to get there?

Draw on a graph.

What was the height of the cliff?

How far did the arrow go before it hit the ground?

Find Domain and Range

At what distance is the height 16 m? At what distance is the height greater than 0 16m?

## C11 - 4.8 - Max Height/Total Distance

The height vs distance of a bow and arrow shot off a cliff is represented by following equation:

$$h = -5d^2 + 10d + 1$$

Draw on a graph.

What is the maximum height and the distance it took to get there?

What was the height of the cliff?

How far did the arrow go before it hit the ground?

Find Domain and Range

## C11 - 4.8 - Max Height/Total time

The height vs time of a bow and arrow shot straight up is represented by following equation:

$$h = -5t^2 + 20t + 2$$

Draw on a graph.

What is the maximum height and the time it took to get there?

What was the height of the cliff?

How long did the arrow fly before it hit the ground?

Find Domain and Range