

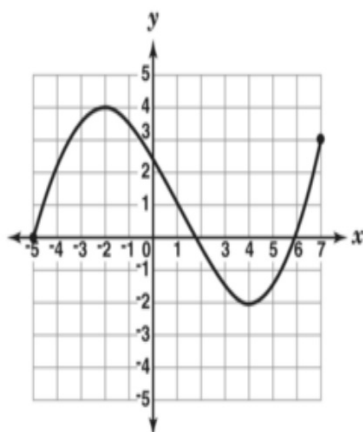


Do NOW

**Chromebooks / Calculators**



Look at the function that is graphed below.



What is the range of this function?

- A)  $-5 \leq y \leq 7$     B)  $-5 \leq y \leq 3$     C)  $-2 \leq y \leq 3$     \*D)  $-2 \leq y \leq 4$

**Factor the following expressions:**

a.  $x^4 - 121$

b.  $x^2 + 8x - 65$

c.  $4x^2 + 18x + 20$

Check In

What is your biggest fear?



## Quadratic Equations

**Standard Form:**  $ax^2 + bx + c$  ; where  $a \neq 0$

**Shape:**



$a > 0$



$a < 0$

**Factor:** means to write quadratic into two binomials multiplied together.

NEVER LET  
YOUR FEAR DECIDE  
YOUR FUTURE.

## Expressions

## Equations

- We solve for the variable
  - We do not solve for the variable
- There is an equal sign
- There is always a solution
- We can graph it and then solve for the solutions
- This always expresses something
- Rewriting and simplifying is the main goal

Expressions

Equations

$$y^2 - 4y + 6 = 2 - y$$

$$p^2 - 6p - 56$$

$$x^2 - 2x + 4 = 0$$

$$x^3 - 64$$

$$3p - 28$$

$$67x + 8$$

$$x^2 + 4x - 6$$

$$y^4 - 64 = 0$$

$$3p^3y + 4y = 0$$

The **Zero Product Property** states that if the product of two factors is 0, then at least one of the factors is 0. After setting a quadratic equation equal to 0, we can sometimes factor the quadratic expression and solve the equation by setting each factor equal to 0.

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## Guided Practice

### Example 2

Solve  $8x^2 - 8 = -x^2 + 56$  by factoring.



## Guided Practice

### Example 3

Solve  $x^2 + 8x = 20$  by factoring.

“ Would I rather be  
feared or loved?  
Um...easy, both.  
I want people  
to be afraid  
of how much  
they love me.  
”





$$4. \quad x^2 - 75 = -10x$$

$$5. \quad 10r^2 = 400r$$



6.  $3x^2 + 15x + 12 = 0$

7.  $2x^2 + 5x + 3 = 0$



$$-3x^2 + 17x - 20 = 0$$

$$8x^2 - 18x = 5$$



For the rest of the class...

1. Go to Google Classroom and start on the Worksheet 09/20/16.  
SHOW your work and answers on paper.

(DO ONLY EVENS; solution is posted around the classroom).

2. Your homework is available for pick-up. It is due tomorrow.

BONUS. If you complete the odds of the Worksheet 09/20/16 as well, turn it in for extra credit(Exit Ticket grade +5).

# Exit Ticket

**#1** Describe, in your own words, the difference between an expression and an equation.



**#2** Solve for x:  $x^2 - 9 = 0$

