

Week 1 Task List

This week we will cover Sections 1.1, 1.2, and 1.4 in your e-text. Work through each of the following tasks, carefully filling in the following pages in your notebook.

Polya Time

- My time requirement for this week is: _____ minutes

Section 1.1 Linear Equations in One Variable

- Work through Objective 1 then do problems #1-4
- Work through Objective 2 then do problems #5-15
- Work through Objective 4 then do problems #16-24

Section 1.2 Linear Inequalities in One Variable

- Work through Objective 1 then do problems #25-26
- Work through Objective 2 then do problems #27-31
- Work through Objective 3 then do problems #32-34
- Work through Objective 4 then do problems #35-38

Section 1.4 Absolute Value Equations and Inequalities

- Work through Objective 1 then do problems #39-43

- Now Complete Quiz 1**

Section 1.1 Linear Equations in One Variable

Section 1.1 Objective 1: Determine if a Given Value Is a Solution to an Equation

What is an **algebraic equation**?

What is an **algebraic expression**?

What do algebraic equations have that algebraic expressions do not have?

What is an **equation in one variable**? Write 3 examples.

Write the definition of **Linear Equation in One Variable**.

Linear equations are also called _____ because the exponent of the variable is _____.

Work through Example 1 and write your notes here.

Determine if the given value is a solution to the equation.

a. $2x + 3 = 11$; $x = 4$

b. $3y + 8 = 5y - 4$; $y = 2$

c. $\frac{2}{3}w - \frac{1}{2} = \frac{1}{4}$; $w = \frac{3}{8}$ For part c) watch the accompanying video on page 1.1-6.

NOW WORK WEEK 1 HW EXERCISES #1-4

Section 1.1 Objective 2: Solve Linear Equations in One Variable

Write down the **Properties of Equality** that are used to find simpler equations.

Work through Example 2 and write your notes here.

Use the properties of equality to solve each equation (be sure to show all work for checking your solution).

a. $3x - 1 = 5$

b. $8 = \frac{1}{2}n + 3$

Work through the video that accompanies Example 3 and write your notes here.

Solve: $6x - 5 = 2x - 3$

Work through the video that accompanies Example 4 and write your notes here:

Solve: $5(x - 6) - 2x = 3 - (x + 1)$

What is the **distributive property**? (Look at the solution to Example 4 in your e-text.)

NOW WORK WEEK 1 HW EXERCISES #5-9

(Fill in the Blanks)

When an equation contains fractions, it is usually best to _____ the fractions first. To do this, we multiply both sides of the equation by an appropriate common multiple of all the _____, usually the _____ of all the fractions.

Work through the video that accompanies Example 5 and write your notes here:

$$\text{Solve: } \frac{x}{3} - \frac{5}{12} = \frac{5}{6}x - \frac{11}{12}$$

Work through the video that accompanies Example 6 and write your notes here:

$$\text{Solve: } \frac{1}{3}(1 - x) - \frac{x+1}{2} = -2$$

NOW WORK WEEK 1 HW EXERCISES #10-13

(Fill in the Blanks)

When an equation contains decimals, we _____ the decimals by multiplying both sides of the equation by an appropriate _____ of 10, such as _____, _____, and _____.

Work through the video that accompanies Example 7 and write your notes here:

Solve: $0.5n - 0.25 + 0.075n = 0.5 - 0.025n$

Work through the video that accompanies Example 8 and write your notes here:

Solve: $0.1(y - 2) + 0.03(y - 4) = 0.02(10)$

NOW WORK WEEK 1 HW EXERCISES #14-15

Skip Objective 3 and go to Objective 4 starting on page 1.1-19

Section 1.1 Objective 4: Use Linear Equations to Solve Application Problems

Write down the key words that all translate to an Equal Sign by filling in the table below. See Table 1 in your eText.

Table 1

Key Words That Translate to an Equal Sign			

What is the mathematical equation for “The product of 5 and a number is 45”?

The equation is: _____

Work through Example 10:

Translate each sentence into an equation. Use x to represent each unknown number.

- Fifty-two less than a number results in -21 .
- Three-fourths of a number, increased by 8, gives the number.
- The difference of 15 and a number is the same as the sum of the number and 1.
- If the sum of a number and 4 is multiplied by 2, the result will be 2 less than the product of 4 and the number.

NOW WORK WEEK 1 HW EXERCISES #16-20

Go to page 1.1-24 of your eText.

Write down the 6-Step Problem-Solving Strategy for Applications of Linear Equations (See page 1.1-24)

Problem-Solving Strategy for Applications of Linear Equations

Step 1:

Step 2:

Step 3:

Step 4:

Step 5:

Step 6:

Work through the video that accompanies Example 13 and write your notes here:

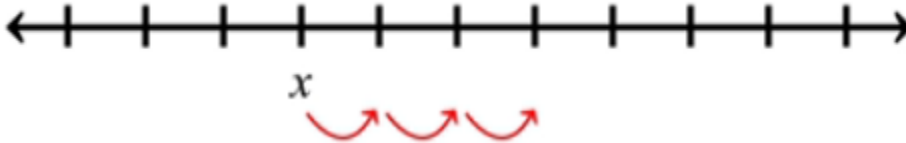
Camille uses the cloud storage services *Dropbox* and *Google Drive* to store her photos in the cloud. The amount of storage she uses in *Google Drive* is 6 times the storage she uses in *Dropbox*. If she uses a total of 14 gigabytes of storage, how much storage does she use with each cloud service?

NOW WORK WEEK 1 HW EXERCISES #21-22

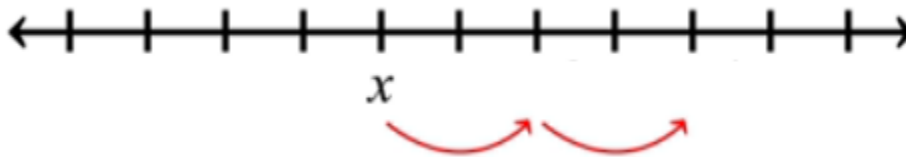
Go to page 1.1-29 of your eText.

Work through the **Concept Animation** and fill in the number lines below:

According to the concept animation, if x represents an integer, then label the next three consecutive integers.



According to the concept animation, if x represents an **even** integer, then label the next two consecutive **even** integers.



Work through the video that accompanies Example 16 and write your notes here:

Three consecutive even integers add to 432. Find the three integers.

NOW WORK WEEK 1 HW EXERCISES #23-24

Section 1.2 Linear Inequalities in One Variable

Section 1.2 Objective 1: Determine if a Given Value Is a Solution to an Inequality

Write down the 5 different types of inequality symbols.

Work through the interactive video that accompanies Example 1 and write your notes here:

Determine if the given value is a solution to the inequality.

- a. $3x + 4 < 8; x = 2$
- b. $n^2 + 5n \geq 4; n = -6$

What is the difference between a **strict** inequality and a **non-strict** inequality?

NOW WORK WEEK 1 HW EXERCISES #25-26

Section 1.2 Objective 2: Graph the Solution Set of an Inequality on a Number Line

Read page 1.2-5.

What is **set-builder notation** and why is it used? Give an example of a set written in set-builder notation.

Sketch the set $\{x|x < 4\}$ on a number line:

Work through Example 2 and write your notes here:

Graph each solution set on a number line.

a) $\{x|x \geq 0\}$

b) $\{x|1 < x \leq 7\}$

c) $\{x|x < 3\}$

d) $\{x|0 < x < 4\}$

e) $\{x|x \neq -2\}$

f) $\{x|-1 \leq x \leq 5\}$

g) $\{x|-3 \leq x < 2\}$

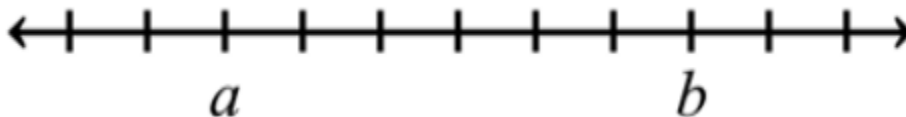
h) $\{x|x \text{ is any real number}\}$

NOW WORK WEEK 1 HW EXERCISES #27-31

Section 1.2 Objective 3: Use Interval Notation to Express the Solution Set of an Inequality

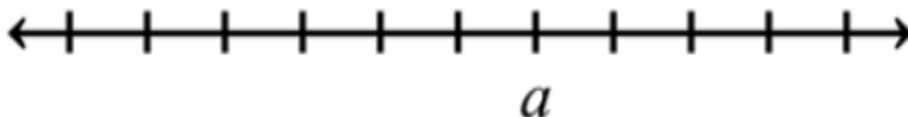
Work through the **Concept Animation** on page 1.2-8 and answer the questions below:

- Graph the inequality $a < x \leq b$ on a number line.



- What is the correct interval notation for your graph from above?

- Graph the inequality $x \leq a$



- What is the correct interval notation for your graph from above?

- What is the correct interval notation for the set of **all real numbers**?

This table summarizes three ways of expressing intervals:

Graph	Interval Notation	Set-Builder Notation
	(a, b)	$\{x a < x < b\}$
	$[a, b]$	$\{x a \leq x \leq b\}$
	$(a, b]$	$\{x a < x \leq b\}$
	$[a, b)$	$\{x a \leq x < b\}$
	(a, ∞)	$\{x x > a\}$
	$(-\infty, b)$	$\{x x < b\}$
	$[a, \infty)$	$\{x x \geq a\}$
	$(-\infty, b]$	$\{x x \leq b\}$

Work through Example 3 and take notes here.

Write each solution set using interval notation.

a) $\{x|x < 5\}$

b) $\{x|2 \leq x < 10\}$

c) $\{x|x \geq -3\}$

d) $\{x|-6 < x < 0\}$

e) $\{x|-1 \leq x \leq 5\}$

f) $\{x|x \text{ is any real number}\}$

NOW WORK WEEK 1 HW EXERCISES #32-34

Section 1.2 Objective 4: Solve Linear Inequalities in One Variable

What is the definition of a **linear inequality in one variable**?

Work through the interactive video on page 1.2-11 to learn how to identify linear and nonlinear inequalities and take notes here.

Write down the 2 properties of inequalities seen below: (refer to page 1.2-12)

Properties of Inequalities:

Let a , b , and c be real numbers.

1. Addition Property of Inequality:

2. Multiplication Property of Inequality:

Work through Example 4 and take notes here.

Solve the inequality $4x - 8 \geq 6x + 6$. Graph the solution set on a number line and write the solution in interval notation.

Work through the video that accompanies Example 5 and take notes here.

Solve the inequality $2 - 5(x - 2) < 4(3 - 2x) + 7$. Write the solution set in set-builder notation.

Work through the video that accompanies Example 6 and take notes here.

Solve the inequality $\frac{m}{2} - 5 + 2m > -\frac{m}{4} + \frac{1}{2}$. Write the solution set in interval notation.

NOW WORK WEEK 1 HW EXERCISES #35-38

Section 1.4 Absolute Value Equations and Inequalities

Section 1.4 Objective 1: Solve Absolute Value Equations

Fill in the blanks:

The absolute value of a number a , written as _____, represents the _____ from a to _____ on a _____ line.

Work through the **concept animation** on page 1.4-3 and answer the questions below.

Solve the equation $|x + 2| = 5$.

Write down the **Absolute Value Equation Property**:

In the **concept animation**, work through the example $3|x - 5| - 7 = 11$.

Work through Example 1 and take notes here: Solve $|m + 4| = 8$.

Work through the video that accompanies Example 2 and take notes here: Solve $|1 - 3x| = 4$.

Work through the video that accompanies Example 3 and take notes here: Solve $|2x - 5| = 0$.

Work through Example 4 and take notes here: Solve $|3x + 7| = -4$

Write down the **Strategy for Solving Absolute Value Equations** (See page 1.4-8)

Step 1:

Step 2:

Step 3:

Step 4:

Work through the video that accompanies Example 5 and take notes here:

$$\text{Solve } 2|w - 1| + 3 = 11.$$

Work through the video that accompanies Example 6 and take notes here:

$$\text{Solve } -3|2 - m| + 8 = 2.$$

NOW WORK WEEK 1 HW EXERCISES #39-43

YOU ARE NOW READY TO TRY WEEK 1 QUIZ. REMEMBER THAT YOU CAN TAKE THIS QUIZ UP TO 10 TIMES.

Week 2 Task List

This week we will cover Sections 1.5 and 2.1 in your e-text. Work through each of the following tasks, carefully filling in the following pages in your notebook.

Grade Check

- Fill out your Grade Calculation page

Polya Time

- My time requirement for this week is: _____ minutes

Read the brief overview of the upcoming Week 3 testing procedures. Then do problem #1.

Section 1.5 Formulas and Problem Solving

- Work through TTK 3 then do problems #2-4
- Work through Objective 1 then do problems #5-11
- Work through Objective 2 then do problems #12-15
- Work through Objective 5 then do problems #16-19

Section 2.1 The Rectangular Coordinate System and Graphing

- Work through Objective 1 then do problems #20-25
- Work through Objective 2 then do problems #26-27
- Work through Objective 3 then do problems #28-29
- Work through Objective 4 then do problems #30-32
- Work through Objective 5 then do problems #33-34

- Now Complete Quiz 2**

NBQ Week 2—Grade Calculation

Name _____

Student ID _____

Log into PolyaWeb to find your individual scores. Use these scores to fill out the tables below. Bring this completed grade sheet to class. It must be filled out completely and correctly at the beginning of class to receive credit. Ask a tutor if you need help finding your individual scores.

In Class Notebook Quizzes (NBQ)

<i>Week</i>	<i>Possible</i>	<i>Earned</i>
NBQ 0	5	
NBQ 1	5	
SUBTOTAL	10	

Polya Lab Attendance (PA)

<i>Week</i>	<i>Possible</i>	<i>Earned</i>
Week 1	5	
SUBTOTAL	5	

Homework (HW)

<i>Homework</i>	<i>Possible</i>	<i>Earned</i>
HW 1	10	
SUBTOTAL	10	

Quizzes

<i>Quiz</i>	<i>Possible</i>	<i>Earned</i>
Quiz 1	10	
SUBTOTAL	10	

Copy your subtotals here and find the grand total:

SUBTOTAL NBQ	
SUBTOTAL PA	
SUBTOTAL HW	
SUBTOTAL QUIZZES	
GRAND TOTAL	

Do not include extra credit.
Do not drop any scores.

Your current grade through week 1:

	÷ .35		%
Enter your Grand Total in the box		Round to the nearest tenth as needed	

It is Time to Start Thinking About Your First Test!

Your first test week starts **NEXT** week during Week 3. Test 1 will cover material from Week 1 and Week 2. Below are some important procedures to be aware of as we get closer to the beginning of your Test 1 week:

- You must earn at least a 60% on Practice Test 1 before taking Test1A.
- You may take the computer tests **three times** in the Polya lab (no more than one test per day).
- You will **not** be allowed to use any calculator other than the TI 30xIIS on any tests.

See the Week 3 Notebook pages for more test details.

NOW WORK WEEK 2 HW EXERCISE #1

Section 1.5 Formulas and Problem Solving

1.5 Things To Know

3. Use Linear Equations to Solve Application Problems (Section 1.1)

Do you remember the 6-Step Problem-Solving Strategy for Applications of Linear Equations? (See your Week 1 notebook pages) Use this strategy to answer homework problems #2-4.

NOW WORK WEEK 2 HW EXERCISES #2-4

Section 1.5 Objective 1: Solve a Formula for a Given Variable

What is the definition of a **formula**?

Give an example of a formula that describes the perimeter of a rectangle.

Work through the interactive video on page 1.5-3 and use the formulas provided to find the value of the unknown variable.

a) $P = 2l + 2w; P = 46\text{cm}, l = 13\text{cm}$. Find w .

b) $A = lw; l = 12\text{ in}, w = 8\text{ in}$. Find A .

c) $V = \frac{1}{3}Bh; V = 200\text{ m}^3, h = 25\text{ m}$. Find B .

We are often interested in solving for specific variables of a formula. In Example 1, we are given the formula for the area of a triangle and the formula for the perimeter of a rectangle. Work through Example 1 now and see if you can solve each formula for the given variable. (Part b has video solution)

$A = \frac{1}{2}bh$; Solve for b .

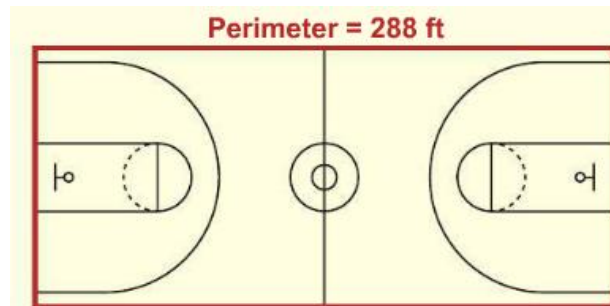
b. $P = 2l + 2w$; Solve for l .

NOW WORK WEEK 2 HW EXERCISES #5-11

Section 1.5 Objective 2: Use Formulas to Solve Application Problems

Work through the video that accompanies Example 2 and write your notes here:

The length of a college basketball court (rectangle) is 6 feet less than twice its width. If the perimeter is 288 feet, then what are the dimensions of the court?

**NOW WORK WEEK 2 HW EXERCISES #12-13**

Work through the video that accompanies Example 3 and write your notes here:

A 13-ounce Maxwell House coffee can has a surface area of $186\pi \text{ cm}^2$. Find the height of the can if its radius is 5.0 cm.

NOW WORK WEEK 2 HW EXERCISES #14-15

Section 1.5 Objective 5: Solve Applications Involving Mixtures

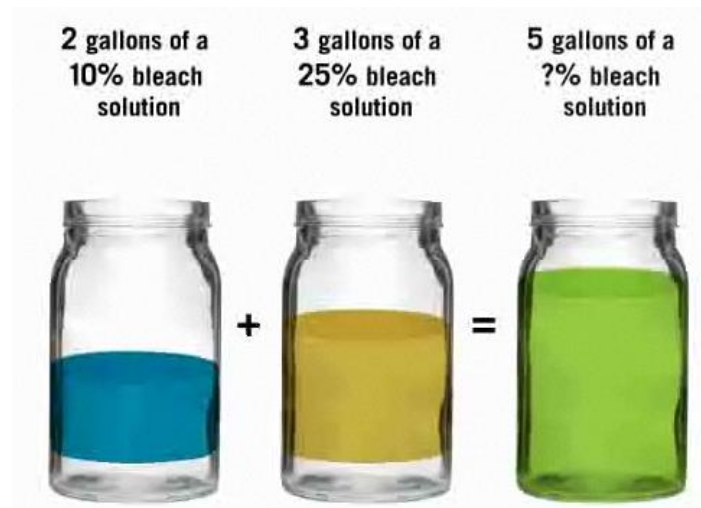
Go to Objective 5 which starts on page 1.5-14 of your eText

What is the definition of **concentration**?

Work through the animation that accompanies Example 8 and take notes here.

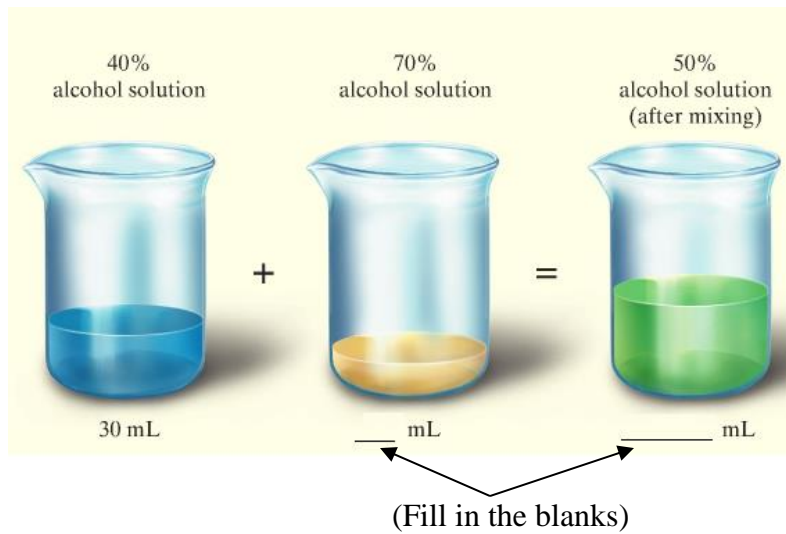
Suppose 2 gallons of a 10% bleach solution is mixed with 3 gallons of a 25% bleach solution.

What is the concentration of bleach in the new 5-gallon mixture?



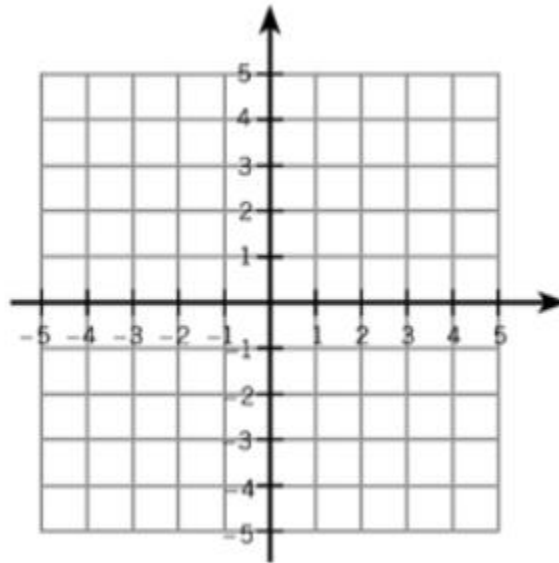
Work through the video that accompanies Example 9 and write your notes here:

How many milliliters of a 70% alcohol solution must be mixed with 30 mL of a 40% alcohol solution to result in a mixture that is 50% alcohol?



NOW WORK WEEK 2 HW EXERCISES #16-19

- Work through the **concept animation** on the bottom of page 2.1-4 and label the x -axis, y -axis, Origin, and label the four quadrants on the diagram below.



Read page 2.1-6 and 2.1-7 and take notes here:

What is the definition of an **ordered pair**?

Work through the **concept animation** found on page 2.1-6 and fill in the blanks below:

When a point lies to the **right** of the origin, its x -coordinate is _____.

When a point lies to the **left** of the origin, its x -coordinate is _____.

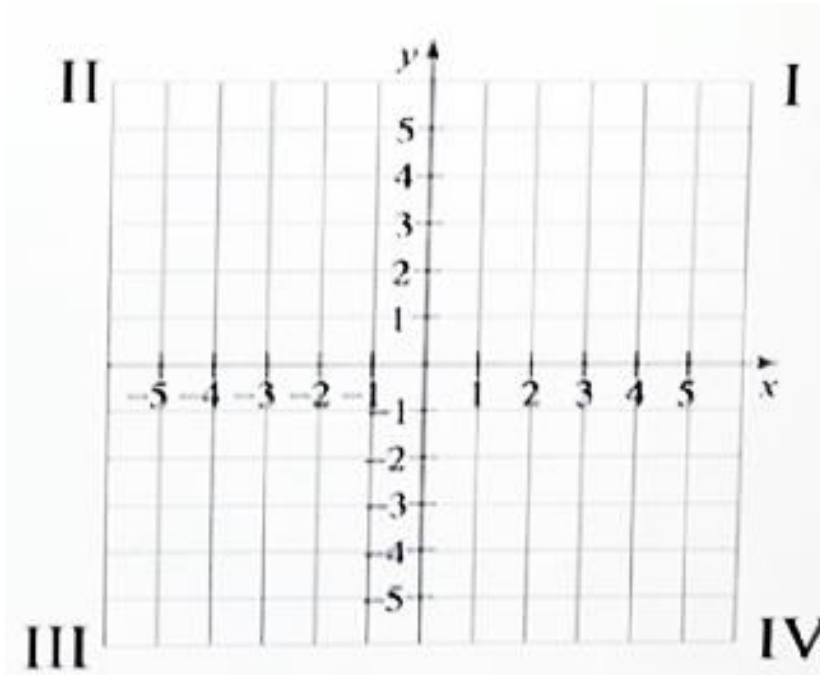
When a point lies **above** the origin, its y -coordinate is _____.

When a point lies **below** the origin, its y -coordinate is _____.

Work through the video that accompanies Example 1 and write your notes here:

Plot each ordered pair in the coordinate plane. In which quadrant or on which axis does each point lie?

$$A(-4,4) \quad B(-5,-2) \quad C(0,-2) \quad D\left(\frac{3}{2},\frac{5}{2}\right) \quad E(3.5,-4.5) \quad F(2,0)$$



NOW WORK WEEK 2 HW EXERCISES #20-24

Section 2.1 Objective 2: Determine if an Ordered Pair is a Solution to an Equation

Describe what it means to be a solution to an equation in two variables.

Work through Example 2 and write your notes here:

Determine if each ordered pair is a solution to the equation $x + 2y = 8$.

a. $(-2, 5)$

b. $(2, 6)$

c. $(-11, \frac{3}{2})$

d. $(0, 4)$

NOW WORK WEEK 2 HW EXERCISES #26-27Section 2.1 Objective 3: Find Unknown Coordinates

Sometimes we are given one coordinate of an ordered pair that is a solution to an equation in two variables and wish to find the other coordinate. Carefully read page 2.1-11 and then work through the interactive video that accompanies Example 3.

Find the unknown coordinate so that each ordered pair satisfies the equation $3x + 4y = 20$.

a. $(8, ?)$

b. $(?, 2)$

c. $(-\frac{2}{3}, ?)$

NOW WORK WEEK 2 HW EXERCISES #28-29

Section 2.1 Objective 4: Graph Equations by Plotting Points

Every equation in two variables has a graph in the coordinate plane. The graph is the set of all ordered pairs that are solutions to the given equation. One way to graph an equation in two variables is to find several ordered pairs that are solutions, plot the points in the coordinate plane, and connect the points with a curve.

Write down the 3-step **Strategy for Graphing Equations by Plotting Points**

Step 1

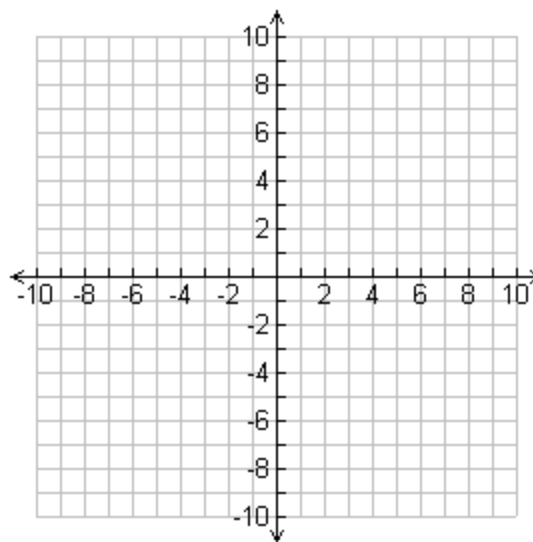
Step 2

Step 3

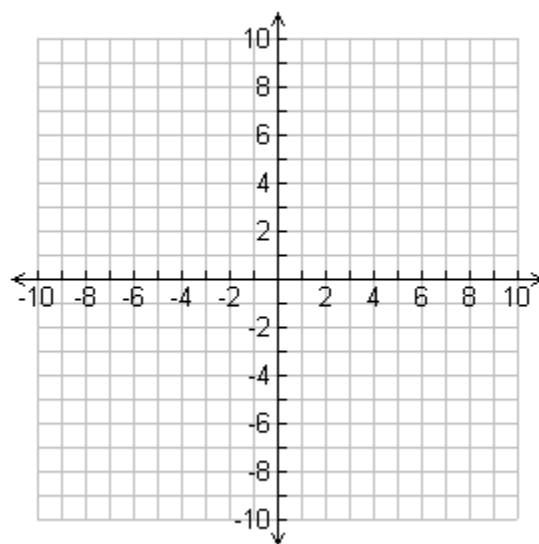
Work through the interactive video that accompanies Example 4. (Part b and c are on the following page)

Graph each equation by plotting points.

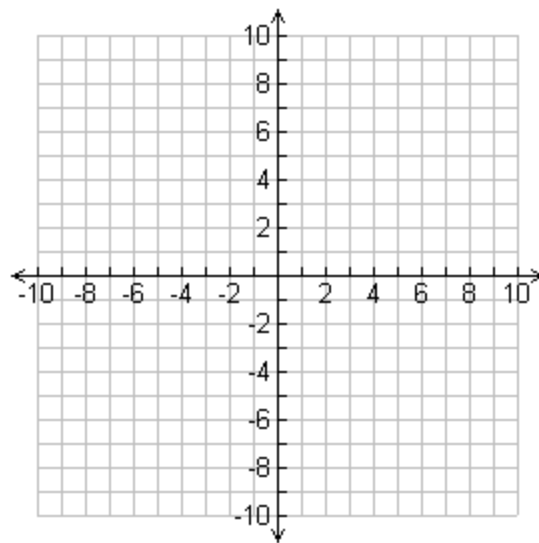
a. $2x + y = 1$



b. $y = x^2 - 4$



c. $y = |x|$



NOW WORK WEEK 2 HW EXERCISES #30-32

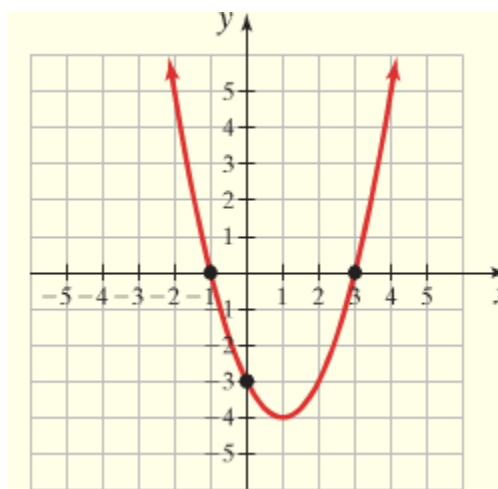
Section 2.1 Objective 5: Find x -and y -Intercepts

What is the definition of a **y -intercept**?

What is the definition of an **x -intercept**?

Take a look at your graph of $2x + y = 1$ from Example 4a on the previous pages. The y -intercept of $2x + y = 1$ is . The x -intercept of $2x + y = 1$ is .

Work through Example 5: What are the x -and y -intercepts of the graph below?

**NOW WORK WEEK 2 HW EXERCISES #33-35**

YOU ARE NOW READY TO TRY WEEK 2 QUIZ. REMEMBER THAT YOU CAN TAKE THIS QUIZ UP TO 10 TIMES.