Week 1A Task List

Your Week 1A HW assignment will cover Section 1.1 and part of Section 1.3 in your eText. Work through each of the following tasks, carefully filling in the following pages in your notebook.

Week 1A Homework Due Date

- ☐ My Week 1A HW assignment is due on _____.
- ☐ Any Week 1A HW exercises completed after the due date will be given a _____ penalty.

Section 1.1 Linear and Rational Equations

- ☐ Work through Section 1.1 TTK
- ☐ Work through Objective 1 then do problems #1-3
- ☐ Work through Objective 2 then do problems #4-5
- ☐ Work through Objective 3 then do problems #6-8
- ☐ Work through Objective 4 then do problems #9-11
- ☐ Work through Objective 5 then do problems #12-13
- ☐ Work through Objective 6 then do problems #14-17

Section 1.3 Complex Numbers

- ☐ Work through Section 1.3 TTK
- ☐ Work through the Introduction to Section 1.3 then do problem #18
- ☐ Work through Objective 1 then do problem #19
- ☐ Work through Objective 2 then do problems #20-21

Section 1.1 Linear and Rational Equations

1.1 Things To Know

1. Factoring Trinomials with a Leading Coefficient Equal to 1

Can you factor the polynomial $x^2 - 2x - 24$? Click on the video link for this objective on page 1.1-2 to see how to factor this polynomial and to review this topic. You can also refer to section R.6 to review this topic.

2. Factoring Trinomials with a Leading Coefficient Not Equal to 1.

Can you factor the polynomial $4x^2 + 17x + 15$? Click on the animation link for this objective on page 1.1-2 to see how to factor this polynomial and to review this topic. You can also refer to section R.6 to review this topic.

Section 1.1 Objective 1 Recognizing Linear Equations

What is the definition of an **algebraic expression**?

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

In the Interactive Video on page 1.1-4, which equation is not linear? Explain why it is not linear.

NOW WORK WEEK 1A HW EXERCISES #1-3

Section 1.1 Objective 2 Solving Linear Equations with Integer Coefficients

What does the term **coefficient** mean?

Work through Example 1: Solve $5(x-6)-2x=3-(x+1)$.

Work through the video that accompanies Example 2: Solve $6-4(x+4)=8x-2(3x+5)$.

NOW WORK WEEK 1A HW EXERCISES #4-5

Section 1.1 Objective 3 Solving Linear Equations Involving Fractions

What is the definition of a **least common denominator (LCD**)?

What is the first thing to do when solving linear equations involving fractions?

Work through the video that accompanies Example 3 and write your notes here:
Solve: $\frac{1}{3}(1-x)-\frac{x+1}{2}=-2$

NOW WORK WEEK 1A HW EXERCISES #6-8

Section 1.1 Objective 4 Solving Linear Equations Involving Decimals

When encountering a linear equation involving decimals, how do you eliminate the decimals?

Work through the video that accompanies Example 4 and write your notes here:
Solve $0.1(y-2)+.03(y-4)=.02(10)$

NOW WORK WEEK 1A HW EXERCISES #9-11

Section 1.1 Objective 5 Recognizing Rational Equations

What is a **rational number**?

What is a **rational expression**?

Write down the definition of a **rational equation** and write down at least one example of a rational equation.

Work through Example 5. Determine which of the following equations are rational equations. (Watch the video to check to see if you are correct.)

a. $\frac{2-x}{x+5}+3=\frac{4}{x+2}$ b. $x^2-2x-24=\frac{1}{2}$ c. $\frac{12}{x^2+x-2}-\frac{x+3}{x-1}=\frac{1-x}{x+2}$

NOW WORK WEEK 1A HW EXERCISES #12-13

Section 1.1 Objective 6 Solving Rational Equations that Lead to Linear Equations

Fill in the blanks below:
The process of solving a rational equation is very similar to the process of solving linear equations containing fractions. That is, we first determine the _____ and then we _____ both sides of the equation by the _____.

We have to be extra cautious when solving rational equations because we have to be aware of _____.

What is a **restricted value?**

Work through Example 6 and take notes here: $\frac{2-x}{x+2} + 3 = \frac{4}{x+2}$

What is the definition of an **extraneous solution**?

Explain why there was an extraneous solution in Example 6.

Write down the five steps for **Solving Rational Equations.**

Step 1

Step 2

Step 3

Step 4

Step 5

Work through Example 7 by following the five steps above and take notes here. Watch the video to check your solution.

Solve $\frac{2}{x+4}+\frac{1}{x-5}=\frac{5}{x^2-x-20}$.

Work through Example 8 by following the five steps for solving rational equations and take notes here. Watch the video to check your solution.

Solve $\frac{12}{x^2+x-2} - \frac{x+3}{x-1} = \frac{1-x}{x+2}$.

NOW WORK WEEK 1A HW EXERCISES #14-17

Section 1.3 Complex Numbers

1.3 Things To Know

1. Simplifying Radicals

Can you simply radical expressions such as $\sqrt{50x^4y^3}$ or $\sqrt[3]{128a^5}$. Work through the video to see how to simplify the expression $\sqrt{50x^4y^3}$. Work through the animation to see how to simplify the expression $\sqrt[3]{128a^5}$.

Read the Introduction to Section 1.3

THE IMAGINARY UNIT

Take notes on the video that explains the imaginary unit here:

What is the definition of the **imaginary unit**?

NOW WORK WEEK 1A HW EXERCISE #18

Section 1.3 Objective 1 Simplifying Powers of *i*

Explain the cyclic nature of powers of *i*:

Work through Example 1 and take notes here: Simplify each of the following:

a. i^{43} b. i^{100} c. i^{-21}

NOW WORK WEEK 1A HW EXERCISE #19

COMPLEX NUMBERS

What is a **complex number**?

Give several examples of complex numbers.

Is every real number considered a complex number? Why or why not?

Section 1.3 Objective 2 Adding and Subtracting Complex Numbers
Watch the video, work through Example 2: Perform the indicated operations:

a. $(7-5i)+(-2+i)$ b. $(7-5i)-(-2+i)$

NOW WORK WEEK 1A HW EXERCISES #20-21

Week 1B Task List

Your Week 1B Assignment will cover part of Section 1.3 and all of Section 1.4 of your eText. Work through each of the following tasks, carefully filling in the following pages of your notebook.

Week 1A Homework Requirement

- ☐ I must receive at least a _____ % on Week 1A HW before I can work on Week 1B HW.

Week 1B Homework Due Date

- ☐ My Week 1B HW assignment is due on _____.
- ☐ I must receive at least a _____ % on Week 1B HW or I cannot take Week 1 Quiz.

Section 1.3 Complex Numbers

- ☐ Work through Objective 3 then do problems #1-3
- ☐ Work through Objective 4 then do problems #4-6
- ☐ Work through Objective 5 then do problems #7-8

Section 1.4 Quadratic Equations

- ☐ Work through Section 1.4 TTK
- ☐ Work through Objective 1 then do problems #9-12
- ☐ Work through Objective 2 then do problems #13-14
- ☐ Work through Objective 3 then do problems #15-18
- ☐ Work through Objective 4 then do problems #19-21
- ☐ Work through Objective 5 then do problems #22-23

- ☐ **Now Complete Quiz 1**

Section 1.3 Objective 3 Multiplying Complex Numbers

Fill in the blanks below:
When multiplying two complex numbers, treat the problem as if were the multiplication of

two _____ . Just remember that _____ = _____ .

Work through the video that accompanies Example 3 and write your notes here.
Multiply $(4-3i)(7+5i)$

Example 4: Simplify $\left(\sqrt{3}-5i\right)^2$. Work through the video that accompanies Example 4 and write your notes here:

NOW WORK WEEK 1B HW EXERCISES #1-3

What is the definition of a **complex conjugate**?

Work through Example 5 and take notes here: Multiply the complex number $z = -2 - 7i$ by its complex conjugate $\bar{z} = -2 + 7i$.

What will **always** happen when you multiply a complex number by its complex conjugate?

Write down the **Theorem** seen after Example 5 in the eText.

Theorem

Section 1.3 Objective 4 Finding the Quotient of Complex Numbers

Watch the video, work through Example 6 and take notes here: Write the quotient in the form $a + bi$: $\frac{1-3i}{5-2i}$

NOW WORK WEEK 1B HW EXERCISES #4-6

Section 1.3 Objective 5 Simplifying Radicals with Negative Radicands

Work through Example 7 and write your notes here: Simplify: $\sqrt{-108}$

True or False: $\sqrt{a}\sqrt{b} = \sqrt{ab}$ for all real numbers *a* and *b*.

Work through Example 8 and write your notes here: Simplify the following expressions:

a) $\sqrt{-8}+\sqrt{-18}$

b) $\sqrt{-8}\cdot\sqrt{-18}$

c) $\frac{-6+\sqrt{(-6)^2-4(2)(5)}}{2}$

d) $\frac{4\pm\sqrt{-12}}{4}$

NOW WORK WEEK 1B HW EXERCISES #7-8

Section 1.4 Quadratic Equations

Read the Introduction to Section 1.4
What is the definition of a **quadratic equation in one variable**?

Section 1.4 Objective 1 Solving Quadratic Equations by Factoring and the Zero Product Property

Watch the video located under Objective 1 and take notes here: (Be sure that you know and understand the **zero product property.**)

Work through the video that accompanies Example 1: Solve $6x^2 - 17x = -12$

NOW WORK WEEK 1B HW EXERCISES #9-12

Section 1.4 Objective 2 Solving Quadratic Equations Using the Square Root Property
Watch the video located just under Objective 2 and take notes on this page:

What is the **square root property** and when can we use it when solving quadratic equations?

Work through the video that accompanies Example 2. Solve each equation.

a) $x^2 - 16 = 0$

b) $2x^2 + 72 = 0$

c) $(x - 1)^2 = 7$

NOW WORK WEEK 1B HW EXERCISES #13-14

Section 1.4 Objective 3 Solving Quadratic Equations by Completing the Square

Write down three perfect square trinomials and factor each as a binomial squared.

What is the relationship between the linear term (*x*-term) and the constant term of every perfect square trinomial?

Work through Example 3 and take notes here.

What number should be added to each binomial to make it a perfect square trinomial?

a) $x^2 - 12x$

b) $x^2 + 5x$

c) $x^2 - \frac{3}{2}x$

NOW WORK WEEK 1B HW EXERCISES #15-16

Write down the **5 steps needed to solve the equation $ax^2 + bx + c = 0$ by completing the square**.

1.

2.

3.

4.

5.

Work through the video that accompanies Example 4. Be sure to use the 5 steps listed above. Solve $3x^2 - 18x + 19 = 0$ by completing the square.

Work through Example 5. Be sure to use the 5 steps listed on your previous page of notes:
Solve $2x^2 - 10x - 6 = 0$ by completing the square.

NOW WORK WEEK 1B HW EXERCISES #17-18

Section 1.4 Objective 4 Solving Quadratic Equations Using the Quadratic Formula

If you can solve the equation $ax^2 + bx + c = 0$, $a \neq 0$ by completing the square then you can derive the quadratic formula. **Work through the animation** on page 1.4-16 that derives the quadratic formula by following the 5-step process for completing the square. Derive the quadratic formula by filling in the steps below:

Deriving the Quadratic Formula

(Write formulas AND descriptive words below.)

Start with the equation $ax^2 + bx + c = 0$, $a \neq 0$.

Step 1.

Step 2.

Step 3.

Step 4.

Step 5.

Work through the video that accompanies Example 6 and write your notes here:
Solve $3x^2 + 2x - 2 = 0$ using the quadratic formula.

Work through the video that accompanies Example 7 and write your notes here: Solve $4x^2 - x + 6 = 0$ using the quadratic formula.

NOW WORK WEEK 1B HW EXERCISES #19-21

Section 1.4 Objective 5 Using the Discriminant to Determine the Type of Solutions of a Quadratic Equation

Watch the video located under Objective 5 and take notes here:

Work through Example 8 and take notes here: Use the discriminant to determine the number and nature of the solutions to each of the following quadratic equations:

a) $3x^2 + 2x + 2 = 0$ b) $4x^2 + 1 = 4x.$

NOW WORK WEEK 1B HW EXERCISES #22-23

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

Week 1 Active Thinking Exercise

Week 1 covered Linear Equations, Complex Numbers, and Quadratic Equations.

1. Write a **list** (in a sentence) of the different methods of factoring trinomials. Include the ways that *you* decide which factoring method is best. *Hint: there are three*.

2. When solving linear equations, what are the things that you need to remember so that you can find the correct solution? Explain what they are, and how you remember them ***in a paragraph***. This will probably vary from student to student.

3. Explain (***in a paragraph***) the pattern that you'll find when you find sequentially higher powers of i. In your paragraph, include a description of how you can find the pattern if you forget it.

4. There are two types of quotients that you encountered when solving problems in which you simplify quotients with imaginary numbers. ***In a paragraph***, explain 1) what the two types of quotients are and 2) how you will simplify them.

5. There are several things to remember when solving quadratic equations. Look at the Week 1 Homework problems, or in your filled out notebook, and ***write a paragraph*** of the things that you needed to remember when you worked these problems.

6. ***Write a paragraph*** that you can use to explain to someone how to solve a quadratic equation by completing the square.

7. After answering these questions, what did you remember that you'd forgotten?

Week 2A Task List

Your Week 2A HW assignment will cover Section 1.5 and part of Section 1.6 in your eText. Work through each of the following tasks, carefully filling in the following pages in your notebook.

Week 2A Homework Due Date

- ☐ My Week 2A HW assignment is due on _____.
- ☐ Any Week 2A HW exercises completed after the due date will be given a _____ penalty.

Prerequisite

- ☐ Earn at least a 20% on Practice Test 1

Section 1.5 Applications of Quadratic Equations

- ☐ Work through Section 1.5 TTK #3 then do problems #1-2
- ☐ Work through Section 1.5 TTK #4 then do problems #3-4
- ☐ Work through Section 1.5 TTK #5 then do problem #5
- ☐ Work through Objective 2 then do problems #6-7
- ☐ Work through Objective 3 then do problems #8-9

Section 1.6 Other Types of Equations

- ☐ Work through Objective 1 then do problems #10-13
- ☐ Work through Objective 2 then do problems #14-19

Section 1.5 Applications of Quadratic Equations

1.5 Things To Know

3. Solving Quadratic Equations by Factoring and the Zero Product Property (Section 1.4).

How are your factoring skills? What does the **zero product property** say? Can you solve the equation $6x^2 - 17x = -12$ by factoring and by using the zero product property? Watch the video on page 1.5-1 under Things To Know #3.

NOW WORK WEEK 2A HW EXERCISES #1-2

4. Solving Quadratic Equations by Completing the Square (Section 1.4)

Explain how to solve the equation $3x^2 - 18x + 19 = 0$ by completing the square. Watch the video on page 1.5-1 under Things To Know #4.

NOW WORK WEEK 2A HW EXERCISES #3-4

5. Solving Quadratic Equations Using the Quadratic Formula (Section 1.4)

Write down the quadratic formula and solve the equation $3x^2 + 2x - 2 = 0$using the quadratic formula. Watch the video on page 1.5-1 under Things to Know #5.

NOW WORK WEEK 2A HW EXERCISE #5

Section 1.5 Objective 1 Solving Applications Involving Unknown Numeric Quantities
We will skip this objective in this course.

Section 1.5 Objective 2 Using the Projectile Motion Model
What is the projectile motion model seen in this objective?

Work through Example 2 taking notes here: A toy rocket is launched at an initial velocity of 14.7 m/s from a 49-m tall platform. The height *h* of the object at any time *t* seconds after launch is given by the equation $h = -4.9t^2 + 14.7t + 49$. When will the rocket hit the ground?

NOTE: If you encounter a quadratic equation that does not factor, remember that you can solve by using the quadratic formula.

Another model used to describe projectile motion (where the height is in feet and time is in seconds) is given by $h = -16t^2 + v_0t + h_0$.

NOW WORK WEEK 2A HW EXERCISES #6-7

Section 1.5 Objective 3 Solving Geometric Applications

Work through the interactive video that accompanies Example 3 and write your notes here: The length of a rectangle is 6 in. less than four times the width. Find the dimensions of the rectangle if the area is 54 in^2.

NOW WORK WEEK 2A HW EXERCISE #8

Work through Example 4 taking notes here: Jimmy bought a new 40-in. high-definition television. If the length of Jimmy's television is 8 in. longer than the width, find the width of the television. (Remember the Pythagorean Theorem: $a^2 + b^2 = c^2$)

NOW WORK WEEK 2A HW EXERCISE #9

Note: You are not assigned problems from objectives 4 and 5!

Section 1.6 Other Types of Equations

Section 1.6 Objective 1 Solving Higher-Order Polynomial Equations

Write the definition of a **linear equation.**

Write the definition of a **quadratic equation.**

Write the definition of a **polynomial equation.**

What is a useful technique that might be used to solve certain higher-order polynomial equations.

Work through the video that accompanies Example 1 and take notes here: Find all solutions to the equation $3x^3 - 2x = -5x^2$.

Work through the video that accompanies Example 2 and take notes here: Find all solutions of the equation $2x^3 - x^2 + 8x - 4 = 0$.

NOW WORK WEEK 2A HW EXERCISES #10-13

Section 1.6 Objective 2 Solving Equations That are Quadratic In Form (Disguised Quadratics)

What does it mean for an equation to be "quadratic in form"?

Work through the interactive video that accompanies Example 3 and solve each equation:

Example 3a: $2x^4 - 11x^2 + 12 = 0$

Example 3b: $\left(\frac{1}{x-2}\right)^2 + \frac{2}{x-2} - 15 = 0$

Example 3c: $x^{2/3} - 9x^{1/3} + 8 = 0$ (Hint: $(x^a)^b = x^{ab}$)

Example 3d: $3x^{-2} - 5x^{-1} - 2 = 0$

NOW WORK WEEK 2A HW EXERCISES #14-19

Week 2B Task List

Your Week 2B Assignment will cover part of Section 1.6 and all of Section 1.7 of your eText. Work through each of the following tasks, carefully filling in the following pages of your notebook.

Week 2A Homework Requirement

- ☐ I must receive at least a _____ % on Week 2A HW before I can work on Week 2B HW.

Week 2B Homework Due Date

- ☐ My Week 2B HW assignment is due on _____.
- ☐ I must receive at least a _____ % on Week 2B HW or I cannot take Week 2 Quiz.

Section 1.6 Other Types of Equations

- ☐ Work through Objective 3 then do problems #1-6

Section 1.7 Linear Inequalities

- ☐ Work through Section 1.7 TTK #1 then do problems #7-9
- ☐ Work through Section 1.7 TTK #2 then do problems #10-12
- ☐ Work through Objective 1 then do problems #13-19
- ☐ Work through Objective 2 then do problems #20-22
- ☐ Work through Objective 3 then do problems #23-28
- ☐ Work through Objective 4 then do problems #29-31

- ☐ **Now Complete Quiz 2**

Section 1.6 Objective 3 Solving Equations Involving Radicals

Work through Example 4 taking notes here: Solve $\sqrt{x-1}-2=x-9$

As indicated in the e-Text, make sure that you ALWAYS isolate the radical prior to squaring both sides of an equation that involves a square root.

What is an **extraneous solution**?

Why is it important to check your solutions when solving equations involving radicals?

Work through the video that accompanies Example 5 taking notes here: Solve $\sqrt{2x+3}+\sqrt{x-2}=4$

NOW WORK WEEK 2B HW EXERCISES #1-6

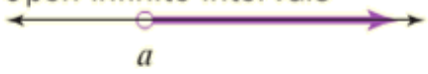
Section 1.7 Linear Inequalities

1.7 Things To Know

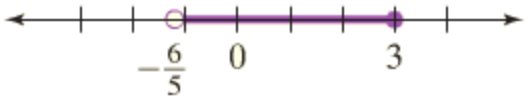
1. Describing Intervals of Real Numbers (Section R.1)

You must get familiar with **Interval Notation, Set Builder Notation, and Using a Number Line** to describe solutions. Click on Section R.1 to see the following summary table which describes 5 different types of intervals.

Table 1

Type of Interval and Graph	Interval Notation	Set-Builder Notation
Open interval 	(a, b)	$\{x \mid a < x < b\}$
Closed interval 	$[a, b]$	$\{x \mid a \leq x \leq b\}$
Half-open intervals  	$(a, b]$ $[a, b)$	$\{x \mid a < x \leq b\}$ $\{x \mid a \leq x < b\}$
Open infinite intervals  	(a, ∞) $(-\infty, b)$	$\{x \mid x > a\}$ $\{x \mid x < b\}$
Closed infinite intervals  	$[a, \infty)$ $(-\infty, b]$	$\{x \mid x \geq a\}$ $\{x \mid x \leq b\}$

Go to Page R.1-12 in the Review Chapter and Try Section R.1 Example 2: Given the set sketched on the number line, a) identify the type of interval, b) write the set using set-builder notation, and c) write the set using interval notation.



a) Identify the type of interval:

b) Write the set using set-builder notation:

c) Write the set using interval notation.

Go to Page R.1-13 in the Review Chapter and Try Section R.1 Example 3 and work through the video:

a) Write the set $\left[-\frac{1}{3}, \infty\right)$ in set builder notation and graph the set on a number line.

b) Write the set $\left\{x \middle| -\frac{7}{2} < x \leq \pi\right\}$ in interval notation and graph the set on a number line.

NOW WORK WEEK 2B HW EXERCISES #7-9

Now go back to Section 1.7

1.7 Things To Know

2. Understanding the Intersection and Union of Sets (Section R.1)
   Watch the video under on page 1.7-1 (Things to Know #2) to see how to find the intersection and union of intervals. Take notes on the following two examples that appear in this video:

   Example a) Find the intersection: $[0,\infty) \cap (-\infty,5]$

   Example b) Find the intersection: $\big((-\infty,-2) \cup (-2,\infty)\big) \cap [-4,\infty)$

NOW WORK WEEK 2B HW EXERCISES #10-12

Section 1.7 Introduction

Read through the Introduction to Section 1.7 and fill in the blanks below:

Unlike _____ that usually have a finite number of solutions (or no solution at all), inequalities often have _____ solutions. For instance, the inequality $2x - 3 \leq 5$ has _____ solutions because there are infinite values of x for which the inequality is _____.

What are the three methods that are typically used to describe the solution to an inequality?

1. _____
2. _____
3. _____

Represent the solution to the inequality $2x - 3 \leq 5$ using the three methods from above. (See Figure 2).

Section 1.7 Objective 1 Solving Linear Inequalities

What is the definition of a **linear inequality**?

Be sure that you are familiar with the 6 properties of linear inequalities below:

Properties of Inequalities

Let a, b, and c be real numbers:

	Property	In Words	Example
1	If $a < b$, then $a + c < b + c$	The same number may be added to both sides of an inequality.	$-3 < 7$ $-3 + 4 < 7 + 4$ $1 < 11$
2	If $a < b$, then $a - c < b - c$	The same number may be subtracted from both sides of an inequality.	$9 \geq 2$ $9 - 6 \geq 2 - 6$ $3 \geq -4$
3	For $c > 0$, if $a < b$, then $ac < bc$	Multiplying both sides of an inequality by a *positive* number *does not* **switch** *the direction* of the inequality.	$3 > 2$ $(3)(5) > (2)(5)$ $15 > 10$
4	For $c < 0$, if $a < b$, then $ac > bc$	Multiplying both sides of an inequality by a *negative* number **switches** *the direction* of the inequality.	$3 > 2$ $(3)(-5) < (2)(-5)$ $-15 < -10$
5	For $c > 0$, if $a < b$, then $\frac{a}{c} < \frac{b}{c}$	Dividing both sides of an inequality by a *positive* number *does not* **switch** *the direction* of the inequality.	$6 > 4$ $\frac{6}{2} > \frac{4}{2}$ $3 > 2$
6	For $c < 0$, if $a < b$, then $\frac{a}{c} > \frac{b}{c}$	Dividing both sides of an inequality by a *negative* number **switches** *the direction* of the inequality.	$6 > 4$ $\frac{6}{-2} < \frac{4}{-2}$ $-3 < -2$

Work through the animation that can be seen on page 1.7-7 for an explanation of why multiplying or dividing both sides of an inequality by a negative number switches the direction of the inequality symbol.

Work through the video that accompanies Example 1 and take notes here:
Solve the inequality $2 - 5(x - 2) < 4(3 - 2x) + 7$. Express the answer in set-builder notation.

Work through Example 2 and take notes here: Solve the inequality $-9x - 3 \geq 7 - 4x$. Graph the solution set on a number line and express the answer in interval notation.

NOW WORK WEEK 2B HW EXERCISES #13-15

Read page 1.7-10 and fill in the blanks:

When a linear inequality involves fractions, we begin the solution process in the same way as when solving _____ involving fractions. That is, we _____ the fractions by first multiplying both sides of the inequality by the _____ .

Similarly, if we encounter a linear inequality involving decimals, we can _____ the decimals by multiplying both sides of the inequality by the _____ _____ .

Work through the video that accompanies Example 3 and take notes here:
Solve the inequalities:

a. $\frac{1-4w}{5} - \frac{w}{2} \leq -5$

b. $3.7y - 6 > 6.1 + 3.45y$

NOW WORK WEEK 2B HW EXERCISES #16-19

Section 1.7 Objective 2 Solving Three-Part Inequalities

Work through the video that accompanies Example 4 taking notes here:
Solve the inequality $-2 \leq \frac{2-4x}{3} < 5$. Graph the solution set on a number line and write the solution in set-builder notation and interval notation.

NOW WORK WEEK 2B HW EXERCISES #20-22

Section 1.7 Objective 3 Solving Compound Inequalities
Watch the video seen on the top of page 1.7-15 and fill in the blanks below:

A **compound inequality** consists of two inequalities that are joined together using the words _____ or _____ .

A number is a solution to a compound inequality involving the word "and" if that number is a solution to _____ inequalities.

Explain why $x = 2$ is a solution to the compound inequality: $x + 2 < 5 \quad and \quad 3x \geq -6$

A number is a solution to a compound inequality involving the word "or" if that number is a solution to _____ inequality.

Is $x = 8$ a solution to the compound inequality $x + 3 \leq 1 \quad or \quad 2x - 5 > 7$? why or why not?

Write the 3-**Step Guidelines for Solving Compound Linear Inequalities**

Step 1.

Step 2.

Step 3.

Work through the video that accompanies Example 5 and take notes here:
Solve the compound inequality $2x - 7 < -1 \ \ and \ \ 3x + 5 \geq 3$. Write the solution in interval notation.

Work through the video that accompanies Example 6 and take notes here:
Solve the compound inequality $1 - 3x \geq 7 \quad or \quad 3x + 4 > 7$. Write the solution in interval notation.

Work through the video that accompanies Example 7 and take notes here:
Solve the compound inequality $3x - 1 < -7 \quad and \quad 4x + 1 > 9$.

NOW WORK WEEK 2B HW EXERCISES #23-28

Section 1.7 Objective 4 Solving Linear Inequality Word Problems

Work through Example 8 and take notes here:

Suppose you rented a forklift to move a pallet with 70-lb blocks stacked on it. The forklift can carry a maximum of 2,535 lbs. If the pallet weighs 50-lb by itself with no blocks, how many blocks can be stacked on a pallet and lifted by the forklift?

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

The perimeter of a rectangular fence is to be at least 80 feet and no more than 140 feet. If the width of the fence is 12 feet, what is the range of values for the length of the fence?

NOW WORK WEEK 2B HW EXERCISES #29-31

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

Week 2 Active Thinking Exercise

Week 2 covered Applications of Quadratic Equations, Other Types of Equations, and Linear Inequalities.

1. Write a paragraph that explains the "trick" to finding the substitution that makes the problems easy for equations that are Quadratics in Form.

2. Write a couple of sentences to explain 1) what restricted or extraneous solutions are, 2) when you need to check for them, and 3) how to check for them.

3. Write a paragraph that explains how to correctly use interval notation. Include an explanation of unions and intersections in your paragraph.

4. After answering these questions, what did you remember that you'd forgotten?