

# MAT 011 Math FIRS<sup>3</sup>T: Day 1 Handout

## Using MyLabsPlus to Take Notes & Complete Assignments

1. Use **Firefox** or **Google Chrome** to access: [www.aacc.mylabsplus.com](http://www.aacc.mylabsplus.com)

Enter your **User Name** & **Password**.  
Click **Sign In**.

Click the link for your class from the course list.

2.

MAT 011 is divided into 10 different modules.  
Click on **Module 0** to get started.

Each Mod starts with a set of directions to guide you through the requirements of the module.

3.

Each Mod starts with a set of directions to guide you through the requirements of the module.

**Module 0**

Each module has a set of instructions to guide you through the requirements of the module.

1. Begin this module by clicking the link for **Notes for Section 1.4**.
2. Follow the directions found in the **Notes for Section 1.4**.
3. Once you have completed the **Notes for Section 1.4**, you can begin your MyLabsPlus assignment.

▶ [Notes for Section 1.4](#)  
▶ [M0: Introduction to MyLabsPlus](#)

Click the **Notes for Section 1.4** to open the **Multimedia Textbook**.  
This is the interactive e-book that will be used for learning math concepts and skills and completing the required Note Taking Guide.

4. Below are some useful features of your Multimedia Textbook.

Click the forward or back arrows to view other textbook pages.

The Section Titles are clearly numbered. This is **Section 1.4** of the Multimedia Textbook.

Video lecture for the entire section (15 to 20 mins.)

Videos for each individual objective (3 to 5 mins.)

Also click the vertical bars on the left/right sides to move pages.

**1.4 Exponents, Order of Operations, Variable Expressions, and Equations**

**OBJECTIVES**

- 1 Define and Use Exponents and the Order of Operations.
- 2 Evaluate Algebraic Expressions, Given Replacement Values for Variables.
- 3 Determine Whether a Number Is a Solution of a Given Equation.
- 4 Translate Phrases Expressions and into Statement

**OBJECTIVE 1 Using Exponents and the Order of Operations**

Frequently in algebra, products occur that contain repeated multiplication. For example, the volume of a cube whose sides each measure 2 (2 · 2 · 2) cubic centimeters. We may use **exponential notation** to write such products in a more compact form. For example,

$$2 \cdot 2 \cdot 2 \quad \text{may be written as} \quad 2^3.$$

The 2 in  $2^3$  is called the **base**; it is the repeated factor. The 3 in  $2^3$  is called the **exponent** and is the number of times the base is used as a factor. The expression  $2^3$  is called an **exponential expression**.

$2^3 = 2 \cdot 2 \cdot 2 = 8$

The **Objectives** are always listed at the beginning of each section of the multimedia text. In the Note Taking Guide you will copy the objectives, and include sample problems illustrating each objective.

**Helpful Hint**

$2^3 \neq 2 \cdot 3$  since  $2^3$  indicates repeated **multiplication** of the same factor.

$$2^3 = 2 \cdot 2 \cdot 2 = 8, \text{ whereas } 2 \cdot 3 = 6.$$

**Order of Operations**

Simplify expressions using the order below. If grouping symbols such as parentheses are present, simplify expressions within those first, starting with the innermost set. If fraction bars are present, simplify the numerator and the denominator separately.

1. Evaluate exponential expressions.
2. Perform multiplications or divisions in order from left to right.
3. Perform additions or subtractions in order from left to right.

**Rules and Helpful Hints** are highlighted to provide key concepts, strategies, and vocabulary. These can be included in the blank space for summary notes at the beginning of the Note Taking Guide.

**Interactive Links in the Multimedia Textbook**



**Video Icons**



**You Try It Problems**



**Animations**



Use pgs. 3 – 4 to try completing a sample Note Taking Guide.

**MAT 011 - M0: Notes for Section 1.4**

Name \_\_\_\_\_

**Introduction to MyLabsPlus**

Date \_\_\_\_\_

*Use the following information to locate the correct example problems listed for Objective 1 below. Copy the required information into each box.*

Locate **Example 1** on pg. 25 of the Multimedia Textbook. Roll the mouse over the two video icons to see that these are **Examples 1a & 1e**.



**EXAMPLE 1** Evaluate the following:

- a.  $3^2$  [read as “3 squared” or as “3 to the 2 power”]
- b.  $5^3$  [read as “5 cubed” or as “5 to the 3 power”]
- c.  $2^4$  [read as “2 to the fourth power”]
- d.  $7^1$
- e.  $\left(\frac{3}{7}\right)^2$

Watch the **Example 1e Video** and take notes in the designated box

Move to pg. 26 and locate the **Example 2 You Try It Problem**. You Try It problems provide practice opportunities and are often included in the Note Taking Guide.



**EXAMPLE 2** Simplify each expression.

- a.  $6 \div 3 + 5^2$
- b.  $20 \div 5 \cdot 4$
- c.  $\frac{2(12 + 3)}{|-15|}$

Copy & Solve the **Example 2 You Try It Problem** in the designated box below. Show your work and include the solution.

Copy Objective 1 here.

**Write Objective 1:**

<b>Copy &amp; Solve the Example 1e Video Problem</b> From pg. 25 of the Multimedia Textbook	<b>Copy &amp; Solve the Example 2 You Try It Problem</b> From pg. 26 of the Multimedia Textbook

**Write Objective 2:**

<p><b>Copy &amp; Solve the Example 6 Problems (c &amp; d)</b> From pg. 29 of the Multimedia Textbook</p>	<p><b>Copy &amp; Solve the Example 6 You Try It Problem</b> From pg. 29 of the Multimedia Textbook</p>

Use the following information to locate the correct example problems listed for Objective 2 above. Copy the required information into each box.



Locate **Objective 2** on pg. 28 in the Multimedia Textbook and write it in the space above.

Move to pg. 29 to find example problems demonstrating Objective 2.

**OBJECTIVE 2 Evaluating Algebraic Expressions**

In algebra, we use symbols, usually letters such as  $x$ ,  $y$ , or  $z$ , to represent unknown numbers. A symbol that is used to represent a number is called a **variable**. An **algebraic expression** is a collection of numbers, variables, operation symbols, and grouping symbols. For example,



**EXAMPLE 6** Evaluate each expression if  $x = 3$  and  $y = 2$ .

- a.  $2x - y$       b.  $\frac{3x}{2y}$       c.  $\frac{x}{y} + \frac{y}{2}$       d.  $x^2 - y^2$

**Solution**

Copy & Solve the **Example 6 You Try It Problem** in the corresponding box above. Show your work and the correct answer.

and  $y$  with 2.

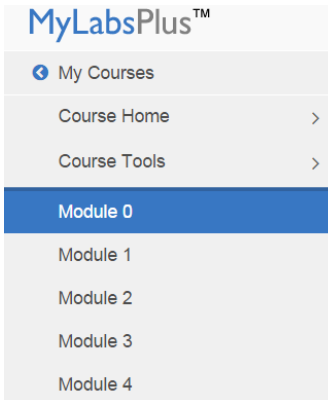
$$\begin{aligned} 2x - y &= 2(3) - 2 \\ &= 6 - 2 \\ &= 4 \end{aligned}$$

Each objective has several **Examples** with step-by-step solutions to help you understand the problem.

Copy & Solve the **Example 6 Problems (only parts c & d)** in the corresponding box above.

You have completed the sample Note Taking Guide for Day 1 on Section 1.4. Close the Multimedia Text Window (or close the TAB on your Browser Bar for the Multimedia Text). This should return you to the Mod 0 instruction screen.

### Next, try a sample homework assignment in MyLabsPlus.

1.  **Module 0**

Each module has a set of instructions for you to follow.

1. Begin this module by clicking on the **M0: Introduction to MyLabsPlus** link.
2. Follow the directions found in the assignment list.
3. Once you have completed the assignment, click on the **OK** button.

Click on the **M0: Introduction to MyLabsPlus** to open the assignment list for Mod 0. You will need additional paper for recording and solving this set of practice problems.

▶ [Notes for Section 1.4](#)

▶ [M0: Introduction to MyLabsPlus](#)

2. **Homework and Tests**

Show All Homework Quizzes & Tests Units

**Assignment**

[M0: Introduction to MyLabsPlus](#)

There is only one assignment in Mod 0. Click on the assignment to open the problem set.

Use the blank paper on pg. 6 to record your homework problems from this *M0: Introduction to MyLabsPlus* practice set. Record each of the 4 Questions and show both the work and the solution.

3. **Homework Overview**

Name M0: Introduction to MyLabsPlus  
Due  
Last Worked

Questions: 4 Scored: 0 Correct: 0 Partial Credit: 0 Incorrect: 0

[Question 1 \(0/1\)](#) [Question 2 \(0/1\)](#) [Question 3 \(0/1\)](#)  
[Question 4 \(0/1\)](#)

Answer **Questions 1 – 4** until all the questions are correct. Use **Similar Exercise** to re-work any incorrect problem.

When your score is 100%, press **OK**. Mod 0 is now complete.

OK

- You will need additional paper for recording and solving the practice problems in each assignment.
- Loose leaf paper can be added to your Note Taking Guide after each section, or you can use a separate spiral notebook to record homework problems.
- Label each problem set with the name of the MyLabsPlus Assignment and the date you work the problems.

*MO: Introduction to MyLabsPlus*

*Date:*

*1.*

*2.*

*3.*

*4.*

# Useful Homework Features of MyLabsPlus

Click on the problem number to move to the next question.

Your current homework score.

**Help Features** are always available on homework assignments and can be used for any problem that you are struggling to solve.

**Math Tools** for entering answers such as fractions or exponents.

**Graphing Tools** for drawing lines and curves.

**Similar Exercise** allows you to re-work any incorrect problem.

Press **Save** to keep your current score.

The screenshot shows a homework problem for the equation  $x - y = 7$ . It includes a table for solutions, a graphing tool with a coordinate plane showing a line, and a sidebar with buttons for 'Help Me Solve This', 'View an Example', 'Textbook', 'Ask My Instructor', and 'Print'. The 'HW Score' is 80% (4 of 5 pts).

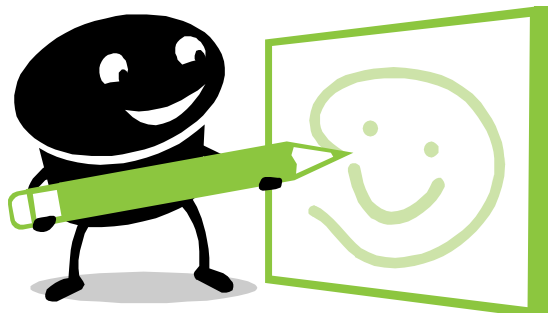
## To Exit MyLabsPlus:

Close any open windows (or TABS in the Browser Bar). This returns you to the MyLabsPlus home screen.

Click your name in the upper right corner and press **Sign Out** to exit MyLabsPlus.

The screenshot shows the MyLabsPlus home screen with a sidebar on the left containing 'My Courses', 'Course Home', 'Course Tools', and 'Module 0'. The main content area shows 'Module 0' with instructions. In the top right corner, a user profile for 'Henry Toman' (hdtoman@mymail.aacc.edu) is visible with a 'Sign Out' button.

# You have completed the Day 1 Orientation to Math FIRS<sup>3</sup>T



## What is Math FIRS<sup>3</sup>T ?

**F**OCUSED class time for hands-on learning.

**I**NDIVIDUALIZED instruction for each student.

**R**ESOURCES for online help and open tutoring labs on campus.

**S**UPPORT and assistance from a Professor during every class.

**S**TUDENT centered approach to build confidence and understanding.

**S**UCCESS due to mastery of the content in each assignment.

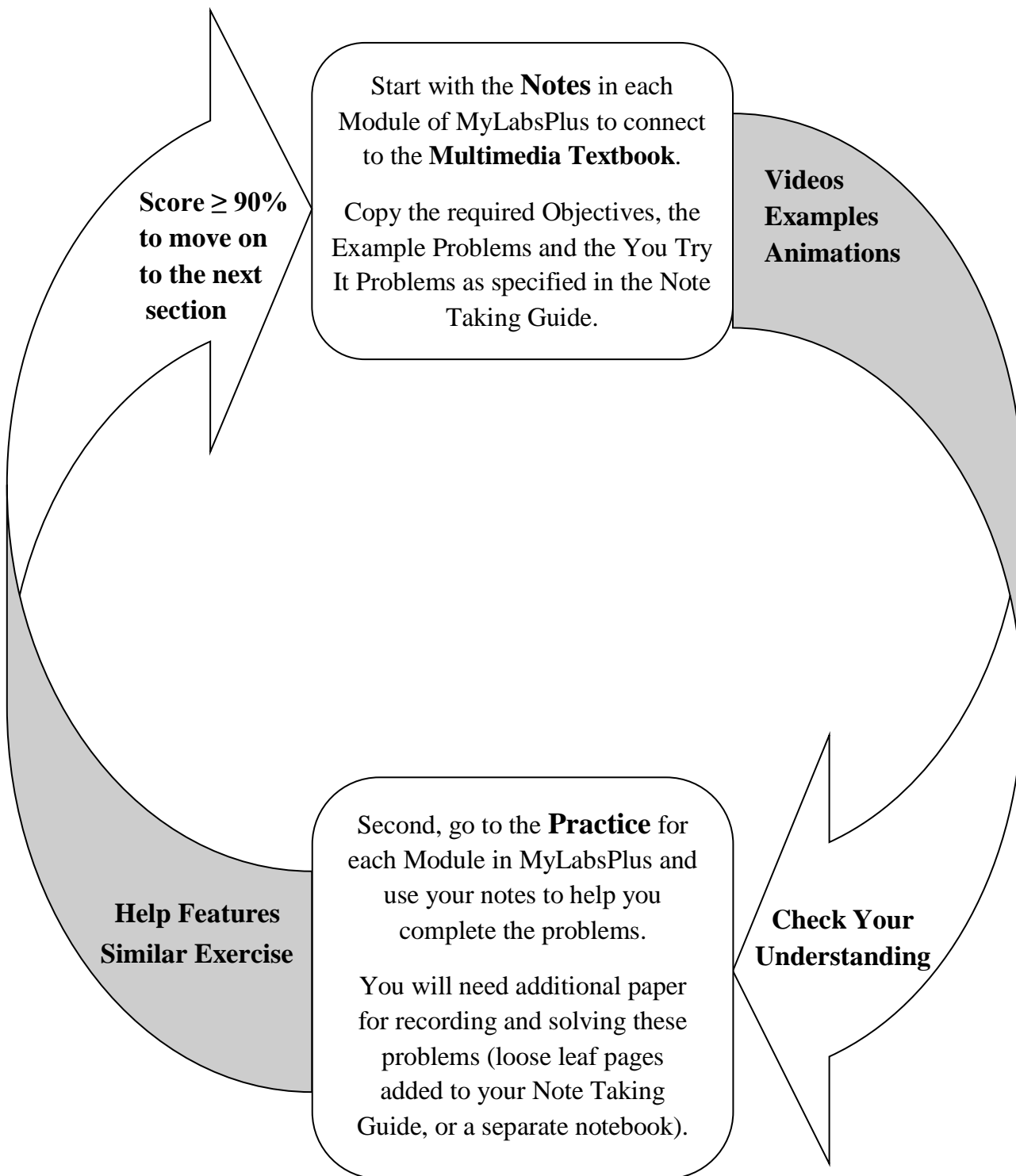
**T**ECHNOLOGY that enhances student engagement and achievement.

## What are ALL these additional pages?

- The first set of pages from the Note Taking Guide is included so you can immediately start working on Modules 1 & 2.
- You must purchase a MAT 011 Note Taking Guide from the College Bookstore in order to complete the remaining modules.
- Remember to ADD these pages to the beginning of your purchased Note Taking Guide.



# The Daily Flow of Math FIRS<sup>3</sup>T



# **Math 011 Note-Taking Guide**

## **Table of Contents**

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### **Notes for Unit 1: Modules 1 – 4**

- **Mods 1 & 2 included in this Day 1 Handout.**
- **Mods 3 – 10 included in the MAT 011 Note Taking Guide that must be purchased from the AACCC Bookstore.**

### **Notes for Unit 2: Modules 5 – 6**

### **Notes for Unit 3: Modules 7 – 8**

### **Notes for Unit 4: Modules 9 – 10**

### **Final Exam Preparation**

### **Optional Notes for Sections 7.1 & 7.2**

# Test-Out Options: For Students Interested in Accelerating

Note: If you are not interested in the Test-Out Options, then skip to pg. 15 and begin working on the notes for M1: Review Practice A.

## MAT 011: Unit 1

Every unit has **Test-Out** options for the Proctored Quiz and the Unit Test.

### Test-Out Practice PQ #1: M1-M2 Proctored Quiz #1 Test-Out: M1-M2

- M1: Review Practice A
- M1: Tips for Success
- M1: Review Practice B
- M1: Checkpoint Prep
- M1: Checkpoint Quiz
- Syllabus Quiz A*
- M2: Practice 2.2 & 2.3A
- M2: Practice 2.3B
- M2: Quiz Prep
- Syllabus Quiz B*

For example, if you pass the **Test-Out Proctored Quiz #1** with a **75%** or higher, then you skip Mods 1 & 2 and move ahead to Mod 3.

If you pass the **Proctored Unit 1 Test-Out** with a **75%** or higher, then you skip Mods 3 & 4 and move ahead to Unit 2.

### NOTEBOOK CHECK M2: Proctored Quiz #1

### Test-Out Practice Unit 1: M1-M4 Proctored Unit 1 Test-Out: M1-M4

- M3: Practice 2.4
- M3: Practice 2.5
- M3: Practice 2.6 & 2.7
- M3: Checkpoint Prep
- M3: Checkpoint Quiz
- M4: Practice 2.8
- M4: Checkpoint Prep
- M4: Checkpoint Quiz
- M4: Test Prep Unit 1

### Important Test-Out Facts:

- You only get 1 attempt to Test-Out.
- Try to complete the Notes for the modules included on the Test-Out **before** completing the Test-Out Practice Problems.
- Record the Test-Out Practice Problems.
- Complete the Test-Out Practice to 90%. Do NOT complete the other module assignments.
- If you do not score 75% or higher, then you **MUST** complete all of the required Notes and practice assignments in order to re-test.

### NOTEBOOK CHECK Proctored Unit 1 Test on Mods 1 – 4

## Understanding the Guidelines for Testing Out of Proctored Quizzes and Unit Tests

- ❑ Consider trying to Test-Out of any Proctored Quiz or any Proctored Unit Test for which you are familiar with the content.
- ❑ **Requirement 1:** Record each problem, and its worked solution, from the Test-Out Practice using the provided sheets in the Note Taking Guide. Your instructor, or the lab staff, will check and approve this work prior to a Test-Out attempt.
- ❑ **Requirement 2:** Complete the Test-Out Practice to 90%. Please be aware that the Test-Out Practice only provides an overview of the concepts being tested. There may be problems on the Test that are not included in the Test-Out Practice. Do NOT complete the other Module assignments.
- ❑ Some students find it very beneficial to complete ALL of the Notes for the sections in the Note Taking Guide up to the required Quiz /Test Prep. This provides a more in-depth review of each topic to better prepare for Testing Out.
- ❑ If you cannot complete the prep activities quickly, then STOP the Test-Out attempt. Return to the required Notes and online assignments in order to stay on track and master the material.
- ❑ You are still required to meet the Drop Dead Dates listed on the course schedule, so you must successfully Test-Out or complete the notes and online coursework by the stated deadlines.
- ❑ **Requirement 3:** Pass the Test-Out for the Proctored Quiz and Proctored Unit Test with a 75% or higher on the first attempt. **You only get 1 attempt to Test-Out**, so make certain you are fully prepared before you take the Quiz or Test.
- ❑ If you do not earn a 75% or higher on the Proctored Quiz or Unit Test-Out, then return to working in the Note Taking Guide and the online practice assignments in order to meet the next Drop Dead Date.
- ❑ Your Test-Out grade will count as your Proctored Quiz /Test grade for that unit. You are welcome to re-take a passing Test-Out attempt (75% or higher) in order to earn a better score.
- ❑ If you successfully Test-Out, then move on to the next module. Your instructor will assign grades of 100% to all assignments covered by a passing Test-Out Grade.

*If you are attempting to Test-Out,  
Use these pages to Record the Test-Out Practice Problems*

**MAT 011 - Test-Out Practice PQ #1: M1-M2**

**Date** \_\_\_\_\_

**Preparing to Test-Out of Proctored Quiz #1 (Optional)**

If you are trying to Test-Out of Proctored Quiz #1, then use the following blank pages to neatly copy each of the 15 problems on the Test-Out Practice PQ #1: M1-M2 assignment. **Number each problem, show all the necessary work for solving each problem, and clearly mark the correct solutions.**

**REMEMBER:** You will not be able to take the Test-Out Proctored Quiz #1 unless these pages are complete and have been approved by your instructor!

You must also complete **Test-Out Syllabus Quizzes A & B** prior to starting the Test-Out Proctored Quiz #1: M1-M2.

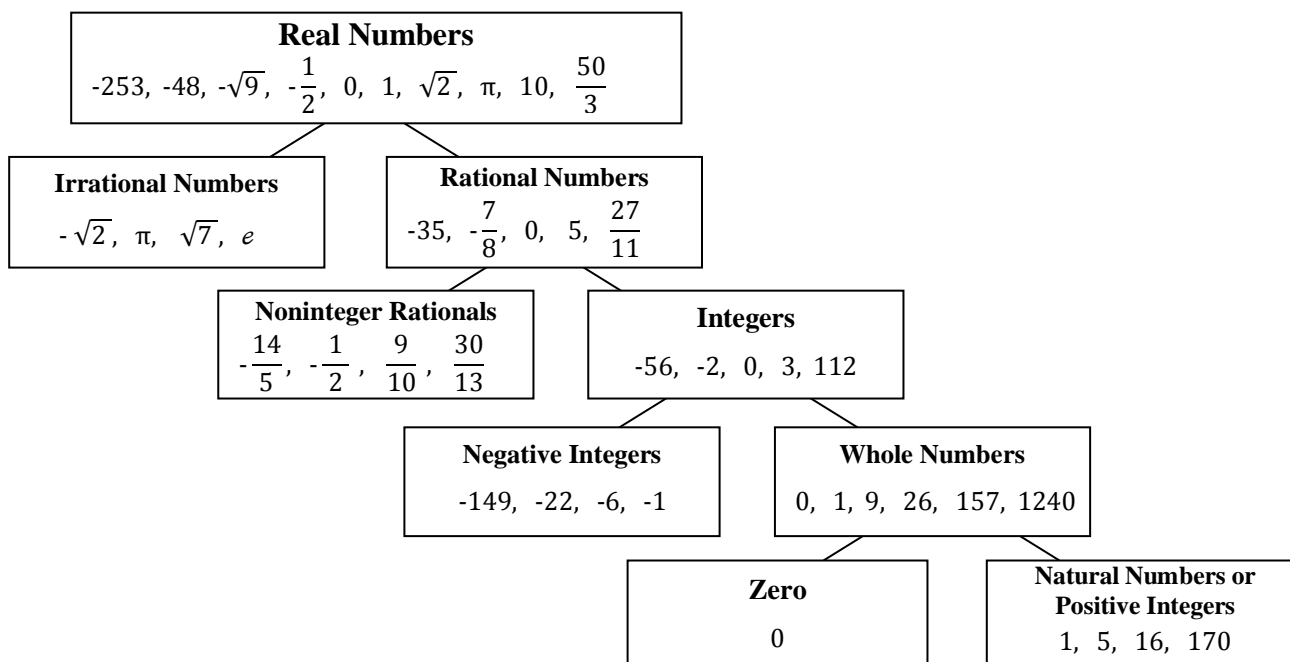
*TEST-OUT PRACTICE CONTINUED*

MAT 011 - M1: Notes for Review Practice A

Name \_\_\_\_\_

Date \_\_\_\_\_

**Common Sets of Numbers:** The following diagram summarizes the relationships among the different sets of real numbers. Examples for each type of number are listed in the boxes below for you to review. For further explanation please see *Section 1.2* (pgs. 9 - 12) in the Multimedia Textbook.



**Brief Review of Signed Number Operations:** Read through the following information to review the rules for adding, subtracting, multiplying and dividing positive and negative numbers. Fill in the missing values in the blanks provided for the *You Try It Problems*.

**Adding Signed Numbers**

- If the two numbers have the SAME sign, then ADD the numbers together. The sign of the answer will be the SAME sign as the original numbers.

Example Problems	You Try It Problems
1. $4 + 7 = 11$	a. $8 + 15 = \underline{\hspace{2cm}}$
2. $-10 + (-20) = -30$	b. $-7 + (-2) = \underline{\hspace{2cm}}$
3. $\frac{1}{8} + \frac{5}{8} = \frac{6}{8} = \frac{3}{4}$ <i>Since these fractions already have a common denominator of 8, just add the numerators. Reduce the fraction by dividing both the numerator and denominator by 2.</i>	c. $\frac{6}{5} + \frac{9}{5} = \underline{\hspace{2cm}}$
4. $39 + 9 = 48$	d. $\frac{-3}{14} + \frac{-5}{14} = \underline{\hspace{2cm}}$
5. $\frac{-2}{5} + \frac{-3}{5} = \frac{-5}{5} = -1$ <i>Since these fractions have a common denominator of 5, add the numerators and reduce the final fraction if possible.</i>	e. $-9 + (-11) = \underline{\hspace{2cm}}$

Check your answers at the bottom of pg. 17.

2. If the two numbers have DIFFERENT signs, then SUBTRACT the numbers. Give the answer the same sign as the number with the largest absolute value (commonly referred to as “the sign of the larger number”).

Example Problems	You Try It Problems
<p>1. <math>-9 + 6 = -3</math></p> <p>2. <math>13 + (-13) = 0</math></p> <p>3. <math>\frac{-2}{3} + \frac{10}{3} = \frac{8}{3}</math></p> <p><i>Since these fractions have a common denominator of 3, add the numerators and leave the answer as a reduced improper fraction. Do NOT type <math>2\frac{2}{3}</math> as it may be marked incorrect if entered into MyMathLab as a mixed number.</i></p> <p>4. <math>6 + (-12) = -6</math></p> <p>5. <math>\frac{-5}{7} + \frac{1}{2} = \left(\frac{-5 \cdot 2}{7 \cdot 2} + \frac{1 \cdot 7}{2 \cdot 7}\right) = \frac{-10}{14} + \frac{7}{14} = \frac{-3}{14}</math></p> <p><i>Since these fractions have different denominators, first find a common denominator. Since 14 is the smallest number that both 7 and 2 divide into evenly, 14 is the least common denominator. Change the fractions into equivalent fractions with denominators of 14 and then add or subtract as indicated. Write the answer as a reduced fraction.</i></p>	<p>f. <math>2 + (-12) = \underline{\hspace{2cm}}</math></p> <p>g. <math>-11 + 11 = \underline{\hspace{2cm}}</math></p> <p>h. <math>\frac{-17}{9} + \frac{2}{9} = \underline{\hspace{2cm}}</math></p> <p>i. <math>14 + (-19) = \underline{\hspace{2cm}}</math></p> <p>j. <math>\frac{-2}{3} + \frac{3}{5} = \underline{\hspace{2cm}}</math></p>

**Subtracting Signed Numbers:** To find the difference of two numbers, re-write the problem by adding the first number to the opposite sign of the second number. If  $a$  and  $b$  are real numbers, then  $a - b = a + (-b)$ . Then follow the steps for *Adding Signed Numbers*.

Example Problems	You Try It Problems
<p>1. <math>8 - 17 = 8 + (-17) = -9</math></p> <p><i>Subtraction means to add the opposite.</i></p> <p>2. <math>-15 - 2 = -15 + (-2) = -17</math></p> <p>3. <math>9 - (-7) = 9 + 7 = 16</math></p> <p><i>Subtracting a negative number is the same as adding a positive number since subtraction means to add the opposite.</i></p> <p>4. <math>\frac{5}{8} - 1 = \frac{5}{8} + \frac{-8}{8} = \frac{-3}{8}</math></p> <p><i>Change 1 into an equivalent fraction with the common denominator of 8.</i></p> <p>5. <math>\frac{-3}{4} - \left(\frac{-5}{8}\right) = \left(\frac{-3 \cdot 2}{4 \cdot 2} + \frac{5}{8}\right) = \frac{-6}{8} + \frac{5}{8} = \frac{-1}{8}</math></p> <p><i>Don't forget to find a common denominator.</i></p>	<p>k. <math>7 - 18 = \underline{\hspace{2cm}}</math></p> <p>l. <math>-1 - 50 = \underline{\hspace{2cm}}</math></p> <p>m. <math>\frac{5}{6} - \left(\frac{-7}{6}\right) = \underline{\hspace{2cm}}</math></p> <p>n. <math>-4 - (-16) = \underline{\hspace{2cm}}</math></p> <p>o. <math>\frac{8}{9} - \frac{2}{3} = \underline{\hspace{2cm}}</math></p>

**NOTE:** You can apply the rules for adding and subtracting signed numbers to problems with more than 2 terms. Simplify from left to right:

$$-9 + 16 - 10 = -9 + 16 + (-10)$$

$$\quad \quad \quad \swarrow \quad \searrow$$

$$\quad \quad \quad 7 + (-10) = -3$$



### Multiplying & Dividing Signed Numbers

1. If the two numbers have the SAME sign, then the product or quotient is POSITIVE.

Example Problems	You Try It Problems
1. $2 \cdot 6 = 12$	p. $15 \cdot 3 = \underline{\hspace{2cm}}$
2. $(-11)(-5) = 55$	q. $(-7)(-9) = \underline{\hspace{2cm}}$
3. $\frac{18}{2} = 9$	r. $\frac{-48}{-3} = \underline{\hspace{2cm}}$
4. $\frac{-2}{5} \cdot \frac{-10}{3} = \frac{-2}{\cancel{5}^1} \cdot \frac{\cancel{-10}^{-2}}{3} = \frac{4}{3}$	s. $\frac{1}{4} \cdot \frac{12}{5} = \underline{\hspace{2cm}}$
<i>A least common denominator is not needed for multiplying or dividing fractions; just multiply the numerators and multiply the denominators. You can cancel any common factors before multiplying. Reduce the answer if possible.</i>	t. $\frac{-3}{8} \cdot (-24) = \underline{\hspace{2cm}}$

2. If the two numbers have DIFFERENT signs, then product or quotient is NEGATIVE.

Example Problems	You Try It Problems
1. $-9 \cdot 4 = -36$	u. $-7 \cdot 3 = \underline{\hspace{2cm}}$
2. $(8)(-10) = -80$	v. $(-12)(2) = \underline{\hspace{2cm}}$
3. $\frac{-14}{2} = -7$	w. $\frac{36}{-9} = \underline{\hspace{2cm}}$
4. $\frac{-5}{7} \div \frac{2}{3} = \frac{-5}{7} \cdot \frac{3}{2} = \frac{-15}{14}$	x. $\frac{-3}{7} \div \frac{5}{14} = \underline{\hspace{2cm}}$
<i>To divide two fractions, multiply the first fraction by the reciprocal of the second fraction. You can cancel any common factors before multiplying. Reduce if possible.</i>	y. $\frac{4}{9} \cdot \frac{-3}{2} = \underline{\hspace{2cm}}$

### Multiplying & Dividing by 0

a) Zero multiplied by any number = zero.

$0 \cdot 7 = 0$

$-9 \cdot 0 = 0$

b) Zero divided by any number = zero.

$\frac{0}{-21} = 0$

$\frac{0}{7} = 0$

c) Any number divided by zero is undefined.

$\frac{15}{0} = \text{undefined}$

$\frac{-21}{0} = \text{undefined}$

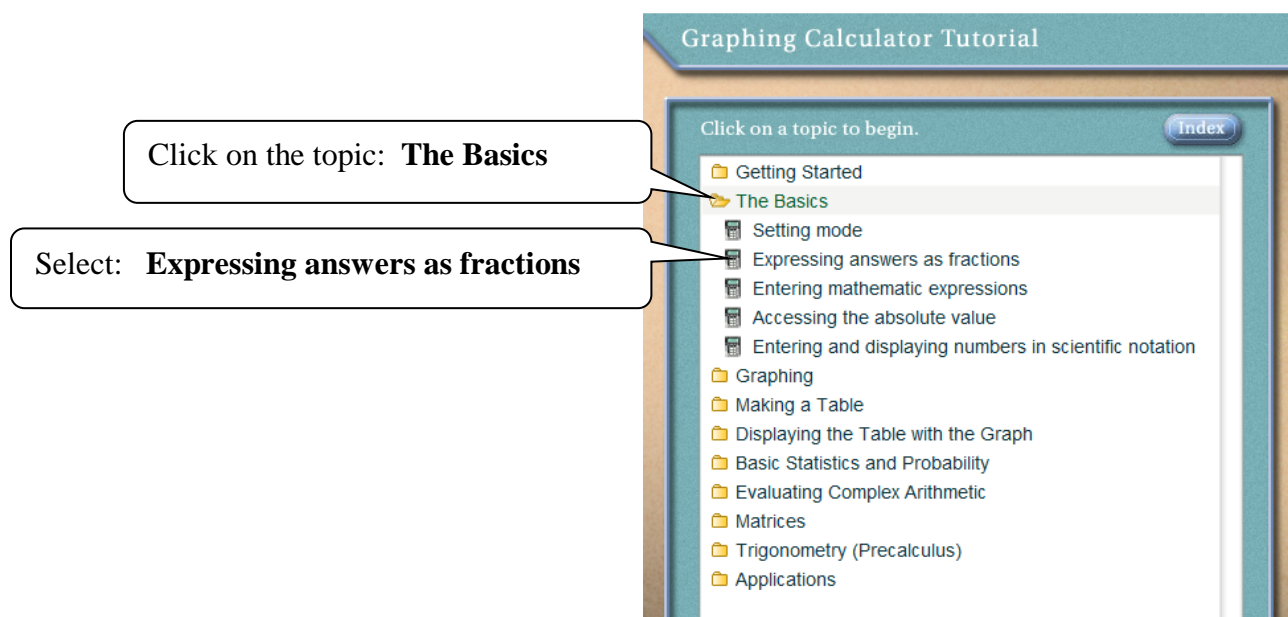
#### Key for You Try It Problems pgs. 15 - 17.

- |          |        |        |         |        |         |         |         |       |
|----------|--------|--------|---------|--------|---------|---------|---------|-------|
| a. 23    | b. -9  | c. 3   | d. -4/7 | e. -20 | f. -10  | g. 0    | h. -5/3 | i. -5 |
| j. -1/15 | k. -11 | l. -51 | m. 2    | n. 12  | o. 2/9  | p. 45   | q. 63   | r. 16 |
| s. 3/5   | t. 9   | u. -21 | v. -24  | w. -4  | x. -6/5 | y. -2/3 |         |       |

*If you are having difficulty with any of the topics in Review Practice A please ask your instructor, or the lab manager, for a copy of the additional notes that are available for MAT 011 Mod 1.*

## Optional Graphing Calculator Review: Fractions

- Go to the MyLabsPlus homepage. On the left panel under **Course Tools** click on **Tools for Success**.
- Scroll down to the section for **Graphing Calculator Help**.
- Select the second option:
  - Use the **Graphing Calculator Tutorial** to learn basic TI calculator functions.
  - Click the blue link for **Graphing Calculator Tutorial**.



Use the interactive calculator to practice entering and computing fraction operations.

If you are not familiar with graphing calculator operations, this online **Graphing Calculator Tutorial** can be used to help you learn the keystrokes needed to efficiently use your calculator in MAT 011.



*M1: Review Practice A Cont.*

*Attach additional loose leaf paper as needed.*

**MAT 011 - M1: Tips for Success in Mathematics      Date \_\_\_\_\_**

Click on the M1: Tips for Success in Mathematics Assignment in MyLabsPlus and watch the assigned videos. Copy notes from each of the videos in the boxes below.

<b>Watch the Obj. 1 Video:</b> <i>Get Ready for This Course</i>	<b>Watch the Obj. 2 Video:</b> <i>Understand Some General Tips for Success</i>
Use this space to take Notes on the Obj. 1 Video.	Use this space to take Notes on the Obj. 2 Video.

**Watch the Obj. 6 Video: *Develop Good Time Management.***

Fill out the Schedule Grid on pg. 22, as described in the Objective 6 Video. In order to successfully complete MAT 011 in one semester, you must commit to a regular routine of working on MyLabsPlus beyond your scheduled class time. Develop a schedule for working, outside of class, on notes and homework problems. Be prepared to share your plan for success with your Instructor.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6:00 am							
7:00							
8:00							
9:00							
10:00							
11:00							
12:00 pm							
1:00							
2:00							
3:00							
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11:00							
12:00							
1:00 am to 5:00 am							

Now, assess your schedule. Will you be over extending yourself? You may need to adjust your class load, work load, social time, etc. to have enough hours in the week to succeed in MAT 011. Describe your plan for success below.

**Watch the Video: *How to Enter Answers Orientation.***

This video will demonstrate the various features of MyLabsPlus and help you learn the correct format for typing answers into the computer.

**After Watching the 4 Videos in this Assignment, Press OK to receive a 100% score.**

Read through the following information to review the order of mathematical operations, variable expressions and the properties of real numbers used to simplify algebraic expressions and equations. Fill in the missing values in the blanks provided for the **You Try It Problems**.

**Order of Operations:** A common technique for remembering the order of mathematical operations is the abbreviation **PEMDAS** (*Please Excuse My Dear Aunt Sally*).

The abbreviation stands for the following:

- P** First, simplify expressions inside **Parentheses** (Grouping Symbols).
- Grouping symbols can include Parentheses ( ), Brackets [ ] or { }, and Absolute Value Bars | |.
  - If multiple grouping symbols are included, then start with the innermost set.
  - The order of operations also applies while simplifying inside the grouping symbols.
  - A fraction bar implies grouping, so simplify the numerator and the denominator separately.

- E** Next, simplify any **Exponents**.
- Exponents can include Powers  $7^2$ , and Radicals  $\sqrt{4}$ .
  - In the expression  $2^3$ , 2 is the base and 3 is the exponent so  $2^3 = 2 \cdot 2 \cdot 2 = 8$ .
  - Be careful when evaluating an exponential expression with a negative base. For example:  
 $(-3)^4 = (-3)(-3)(-3)(-3)$  Since the negative sign is inside the parentheses the entire base  $(-3)$  is multiplied by itself 4 times.  
 $= 81$   
 $-3^4 = -(3)^4$  Since the negative sign is NOT inside the parentheses it means the base 3 is multiplied by itself 4 times and the sign of the entire expression becomes negative.  
 $= -(3)(3)(3)(3)$   
 $= -81$

**MD** Perform all **Multiplications** and **Divisions**, working in order from left to right.

**AS** Perform all **Additions** and **Subtractions**, working in order from left to right.

Simplify the Following Example Problems:	You Try It Problems: Simplify
<p>1. <math>50 + 3 \cdot 7 = 50 + 21 = 71</math>  <i>Since there are no parentheses or exponents, first multiply and then add the remaining values.</i></p>	<p>a. <math>5 \cdot 8 - 32 + 3 = \underline{\hspace{2cm}}</math></p>
<p>2. <math>-7 + (5 - 2) + 4^2 = -7 + 3 + 4^2</math>  <math>= -7 + 3 + 16 = 12</math>  <i>First simplify the parentheses and then the exponent. Now add or subtract the remaining values.</i></p>	<p>b. <math>3^3 - (-2 + 9) + 11 = \underline{\hspace{2cm}}</math></p>
<p>3. <math>2[5 + 2(8 - 3)] = 2[5 + 2(5)]</math>  <math>= 2[5 + 10]</math>  <math>= 2[15] = 30</math>  <i>Start with the innermost set of parentheses and then simplify inside the brackets by performing the multiplication and then addition. Finally multiply the remaining values.</i></p>	<p>c. <math>3[20 - 5(9 + 3)] = \underline{\hspace{2cm}}</math></p>

Check your answers at the bottom of pg. 26.

**Order of Operations, Continued:**

<b>Simplify the Following Example Problems:</b>	<b>You Try It Problems: Simplify</b>
<p>4. <math>-3^2 + (-4)^2</math>  <math>= -9 + 16</math>  <math>= 7</math></p> <p><i>First simplify the exponent inside parentheses and then the exponent without parentheses. Remember to be careful because of the negative base. Add the remaining values.</i></p>	<p>d. <math>-2^3 + (-7)^2 = \underline{\hspace{2cm}}</math></p>
<p>5. <math>\frac{ 2 - 6  + 8}{5 \cdot 2 - 4} = \frac{12}{6} = 2</math></p> <p><i>Since there is a fraction bar, simplify the numerator and denominator separately (see below). Reduce the final fraction.</i></p> <p><u>Numerator:</u> <math> 2 - 6  + 8 =  -4  + 8 = 4 + 8 = 12</math>  <i>Simplify the expression inside the absolute value bars. Find the absolute value and add the remaining numbers.</i></p> <p><u>Denominator:</u> <math>5 \cdot 2 - 4 = 10 - 4 = 6</math>  <i>Multiply and then subtract the remaining values.</i></p>	<p>e. <math>\frac{7^2 +  13 - 20 }{-14 \div 7 + 6} = \underline{\hspace{2cm}}</math></p>
<p>6. <math>\frac{6 \div 2 + 3(8 - 5)}{-4^2 + 2} = \frac{12}{-14} = \frac{-6}{7}</math></p> <p><i>Since there is a fraction bar, simplify the numerator and denominator separately (see below). Reduce the final fraction.</i></p> <p><u>Numerator:</u> <math>6 \div 2 + 3(8 - 5) = 6 \div 2 + 3(3) = 3 + 9 = 12</math>  <i>Simplify the expression inside the parentheses. Working from left to right perform the division and then the multiplication. Add the remaining values.</i></p> <p><u>Denominator:</u> <math>-4^2 + 2 = -16 + 2 = -14</math>  <i>Simplify the exponent (notice that the negative sign is NOT inside parentheses). Then add the remaining values.</i></p>	<p>f. <math>\frac{-8(5 + 1) \div 12}{8 + (-4)^2} = \underline{\hspace{2cm}}</math></p>

**Evaluating Algebraic Expressions:** A symbol that is used to represent a number is called a **variable**. An **algebraic expression** is a collection of numbers, variables, operations and grouping symbols. The following are examples of algebraic expressions:

$$5x, \quad 2y + 7, \quad x^2 - 3x + 6 \quad \text{and} \quad \frac{x}{y} - (x + 4).$$

If a specific value is given to a variable, then the algebraic expression can be evaluated by substituting the given value into the variable and simplifying. Algebraic expressions are often used in problem solving and you will frequently encounter them in MAT 011.



Example Problems: Evaluate Algebraic Expressions for the Given Replacement Values	You Try It Problems: Evaluate
1. $5x - 12$ if $x = 4$ $= 5(4) - 12$ $= 20 - 12 = 8$	g. $3x + 7$ if $x = -5$ _____
<i>In the expression, substitute 4 in place of x. Simplify using the order of operations.</i>	h. $ -6w $ if $w = 11$ _____
2. $\frac{x}{y} + 2z$ if $x = -10$ , $y = 2$ and $z = 7$ $= \frac{-10}{2} + 2(7)$ $= -5 + 14 = 9$	i. $\frac{y}{2z}$ if $y = 3$ and $z = 5$ _____
<i>In the expression, substitute -10 in place of x, 2 for y and 7 for z. Simplify using the order of operations.</i>	j. $y^2 - 3y + 8$ if $y = -7$ _____
3. $2x^2 + 3y$ if $x = -5$ and $y = -8$ $= 2(-5)^2 + 3(-8)$ $= 2(25) - 24$ $= 50 - 24 = 26$	

**Combining Like Terms:** Terms with the same variables raised to exactly the same exponent are called **like terms**. Consider the following examples:

- $2x$ ,  $-5x$  and  $17x$  These are **like** terms with the same variable  $x$ .
- $5x$  and  $5x^2$  These are **unlike** terms because of the different exponents.
- $3a$ ,  $8b$  and  $-9c$  These are **unlike** terms because of the different variables.
- $-7$ ,  $0$ ,  $4$  and  $\frac{1}{2}$  These are **like** terms since they are all constant values.

Like terms can be grouped together by combining the **coefficients** of the common variable factors (the coefficient is the numerical value in front of the variable). Combining like terms is necessary for simplifying an algebraic expression or equation.

Simplify the Following Example Problems:	You Try It Problems: Simplify
1. $3x + 10 - 7x$ $= (3x - 7x) + 10 = -4x + 10$	k. $-12a + 13 + 6a =$ _____
<i>Group and combine the like x terms.</i>	
2. $11 - 2y + 6 + 4y$ $= (-2y + 4y) + (11 + 6) = 2y + 17$	l. $9x - 7 + 6 + x =$ _____
<i>Combine the like y terms and the constants.</i>	
3. $5x^2 + 4 - 4x^2 + x$ $= (5x^2 - 4x^2) + x + 4 = x^2 + x + 4$	m. $y^2 + 2 - 7y + 3y^2 =$ _____
<i>Combine the like x<sup>2</sup> terms.</i>	

## The Properties of Real Numbers

- **Commutative Property:** Changing the order in which numbers are added or multiplied does not change their sum or product.

$$\begin{aligned} a + b &= b + a & 4 + 5 &= 5 + 4 \\ a \cdot b &= b \cdot a & 2 \cdot 7 &= 7 \cdot 2 \end{aligned}$$

*NOTE: The commutative property does not apply to subtraction and division.*

- **Associative Property:** Changing the grouping of numbers that are added or multiplied does not change their sum or product.

$$\begin{aligned} (a + b) + c &= a + (b + c) & (3+7)+9 &= 3+(7+9) \\ (a \cdot b) \cdot c &= a \cdot (b \cdot c) & (8 \cdot 2) \cdot 5 &= 8 \cdot (2 \cdot 5) \end{aligned}$$

*NOTE: The associative property does not apply to subtraction and division.*

- **Distributive Property:** This property removes parentheses by distributing (or multiplying) a single product to every term inside the parentheses.

$$a(b + c) = ab + ac \quad \text{OR} \quad a(b - c) = ab - ac$$

$$\begin{aligned} &12(x - 5) && \text{Distribute the 12 to each term inside the parentheses.} \\ &= 12(x) - 12(5) && \text{Multiply and combine like terms if possible.} \\ &= 12x - 60 && \text{The expression can now be written without parentheses.} \end{aligned}$$

Use the Distributive Property to Simplify the Following Example Problems:	You Try It Problems: Simplify
<p>1. <math>5(2y + 6) - 15</math>  <math>= 5(2y) + 5(6) - 15</math>  <math>= 10y + 30 - 15 = 10y + 15</math></p>	<p>n. <math>2(x - 6) = \underline{\hspace{2cm}}</math></p>
<p><i>Only distribute the 5 to the terms inside the parentheses. Combine like terms to simplify.</i></p>	<p>o. <math>-8(2a + 3) + 7 = \underline{\hspace{2cm}}</math></p>
<p>2. <math>-(4x + 3y - 7)</math>  <math>= -(4x) + -(3y) + -(-7)</math>  <math>= -4x - 3y + 7</math></p>	<p>p. <math>5x - (3x - 6) = \underline{\hspace{2cm}}</math></p>
<p><i>Distribute the negative sign to every term inside the parentheses. This will change the sign of each term. Pay careful attention to the signs when simplifying.</i></p>	
<p>3. <math>\frac{1}{2}(8x - 6) - (7x + 1)</math>  <math>= \frac{1}{2}(8x) + \frac{1}{2}(-6) + -(7x) + -(1)</math>  <math>= 4x - 3 - 7x - 1 = -3x - 4</math></p>	<p>q. <math>-(7x - y + 9) - 5 = \underline{\hspace{2cm}}</math></p>
<p><i>Distribute the fraction to every term in the first set of parentheses. Then distribute the negative sign to every term in the second set of parentheses. Be careful with the signs when combining like terms and simplifying.</i></p>	

**Key for You Try It Problems pgs. 23 - 26.**

- a. 11    b. 31    c. -120    d. 41    e. 14    f. -1/6    g. -8    h. 66    i. 3/10    j. 78  
k.  $-6a + 13$     l.  $10x - 1$     m.  $4y^2 - 7y + 2$     n.  $2x - 12$     o.  $-16a - 17$     p.  $2x + 6$     q.  $-7x + y - 14$

***If you are having difficulty with any of the topics in Review Practice B please ask your instructor, or the lab manager, for a copy of the additional notes that are available for MAT 011 Mod 1.***

## Optional Graphing Calculator Review: Order of Operations

The Calculator Explorations from *Section 1.4* (pg. 32 of the Multimedia Textbook) is printed below. Follow the directions for learning how to enter exponents and order of operations problems on a graphing calculator. Then use your calculator to evaluate the 10 problems at the bottom of this page (a key is included to check your work).

### Graphing Calculator Explorations



#### Exponents

To evaluate exponential expressions on a scientific calculator, find the key marked

$y^x$  or  $\wedge$ . To evaluate, for example,  $3^5$ , press the following keys:  $3$   $y^x$   $5$   $=$

or  $3$   $\wedge$   $5$   $=$ .

↓ or

ENTER

The display should read  $243$  or  $3^5$   
243

#### Order of Operations

Some calculators follow the order of operations, and others do not. To see whether or not your calculator has the order of operations built in, use your calculator to find  $2 + 3 \cdot 4$ . To do this, press the following sequence of keys:

$2$   $+$   $3$   $\times$   $4$   $=$ .

↓ or

ENTER

The correct answer is 14 because the order of operations is to multiply before we add. If the calculator displays  $14$ , then it has the order of operations built in.

Even if the order of operations is built in, parentheses must sometimes be inserted. For example, to simplify  $\frac{5}{12 - 7}$ , press the keys

$5$   $\div$   $($   $1$   $2$   $-$   $7$   $)$   $=$ .

↓ or

ENTER

The display should read  $1$  or  $5/(12 - 7)$   
1

#### Use a Calculator to Evaluate Each Expression:

1.  $5^4$       2.  $7^4$       3.  $9^5$       4.  $8^6$       5.  $2(20 - 5)$       6.  $3(14 - 7) + 21$

7.  $24(862 - 455) + 89$       8.  $99 + (401 + 962)$       9.  $\frac{4623+129}{36-34}$       10.  $\frac{956-452}{89-86}$

#### Key for Calculator Explorations Activity

- |        |          |           |            |         |
|--------|----------|-----------|------------|---------|
| 1. 625 | 2. 2,401 | 3. 59,049 | 4. 262,144 | 5. 30   |
| 6. 42  | 7. 9,857 | 8. 1,462  | 9. 2,376   | 10. 168 |

## Optional Graphing Calculator Review: The Negative Key

The Calculator Explorations from *Section 1.7* (pg. 58 of the Multimedia Textbook) is printed below. Follow the directions for learning how to enter negative numbers on a graphing calculator. Then use your calculator to simplify the 10 problems at the bottom of this page (a key is included to check your work).

It is important to learn the difference between using a **negative sign** (  $-$  ) and a **subtraction sign** on the calculator.

### Graphing Calculator Explorations



#### Entering Negative Numbers on a Graphing Calculator

To enter a negative number on a graphing calculator, find a key marked  $\boxed{(-)}$ . Do not confuse this key with the key  $\boxed{-}$ , which is used for subtraction. To enter  $-8$ , for example, press the keys  $\boxed{(-)}$   $\boxed{8}$ . The display will read  $\boxed{-8}$ .

#### Use a Calculator to Simplify Each Expression:

1.  $-38(26 - 27)$
2.  $-59(-8) + 1726$
3.  $134 + 25(68 - 91)$
4.  $45(32) - 8(218)$
5.  $\frac{-50(294)}{175-265}$
6.  $\frac{-444-444.8}{-181-324}$
7.  $9^5 - 4550$
8.  $5^8 - 6259$
9.  $(-125)^2$
10.  $-125^2$

**NOTE:** For Problems 5 & 6, if you don't remember how to use the calculator to express answers as fractions, go back to pg. 18 of this Note Taking Guide and try the tutorial.

#### Key for Calculator Explorations Activity

- |                    |           |            |           |                    |
|--------------------|-----------|------------|-----------|--------------------|
| 1. 38              | 2. 2,198  | 3. -441    | 4. -304   | 5. $\frac{490}{3}$ |
| 6. $\frac{44}{25}$ | 7. 54,499 | 8. 384,366 | 9. 15,625 | 10. -15,625        |



*M1: Review Practice B Cont.*

*Attach additional loose leaf paper as needed.*

**MAT 011 - M1: Checkpoint Prep**

**Date** \_\_\_\_\_

Use the following blank pages to neatly copy each of the 15 problems on the Checkpoint Prep assignment. **Number each problem, show all the necessary work for solving each problem, and clearly mark the correct solutions.**

*CHECKPOINT PREP CONTINUED*



**MAT 011 - M1: Checkpoint Quiz**

**Date** \_\_\_\_\_

Use the following blank pages to neatly copy each of the 5 problems on the Checkpoint Quiz. **Number each problem, show all the necessary work for solving each problem, and clearly mark the correct solutions.**

This is not a proctored quiz so it can be taken outside of class. **The quiz must be re-taken until your score is 80% or higher.** Label each new set of quiz problems as Attempt #1, Attempt #2, etc.

*CHECKPOINT QUIZ CONTINUED*



**Objective 1 Continued:**

**Go to the 2.2 Exercise Set, on the bottom of pg. 92 of the Multimedia Textbook, and click the You Try It icon to the LEFT of #7. This will open a Multimedia Textbook Exercise Set used for the problems below.**

<b>Copy &amp; Solve the Exercise 5 Problem</b> From the Multimedia Textbook Exercise Set in 2.2	<b>Copy &amp; Solve the Exercise 9 Problem</b> From the Multimedia Textbook Exercise Set in 2.2

<b>Copy &amp; Solve the Exercise 15 Problem</b> From the Multimedia Textbook Exercise Set in 2.2	<b>Copy &amp; Solve the Exercise 21 Problem</b> From the Multimedia Textbook Exercise Set in 2.2

**Write Objective 2:**

**Write the Multiplication Property of Equality:**


(From pg. 88 of the Multimedia Textbook)

<b>Copy &amp; Solve the Example 6 Problem</b> From pg. 89 of the Multimedia Textbook	<b>Copy &amp; Solve the Example 7 Video Problem</b> From pg. 89 of the Multimedia Textbook

**Go to the 2.2 Exercise Set, on pg. 93 of the Multimedia Textbook, and click the You Try It icon to the LEFT of #31. This will open a Multimedia Textbook Exercise Set used for the problems below.**

<b>Copy &amp; Solve the Exercise 31 Problem</b> From the Multimedia Textbook Exercise Set in 2.2	<b>Copy &amp; Solve the Exercise 35 Problem</b> From the Multimedia Textbook Exercise Set in 2.2

**Write Objective 3:**

Watch the **Objective 3 Video** by clicking on the icon  located after Objective 3 on pg. 89 of the Multimedia Textbook. Take notes from the Video as indicated in the boxes below.

Copy the First Example Problem, and the Steps for Solving it, as Shown in the Objective 3 Video	Copy the Second Example Problem, and the Steps for Solving it, as Shown in the Objective 3 Video

**\*\* Omit Objective 4, pg. 90 \*\***

### An Alternate Format for Solving Linear Equations

You may have learned a different format for solving equations than the horizontal method shown in Professor Martin-Gay's Videos. Consider the following equation solved in a vertical style:

$$\begin{array}{r}
 2x - 5 = 17 \\
 2x - \cancel{5} = 17 \\
 \underline{+ \cancel{5} + 5} \quad \text{Add 5 to both sides of the equation.} \\
 2x = 22 \quad \text{This leaves } 2x \text{ on the left side of the equation.} \\
 \\
 \frac{2x}{2} = \frac{22}{2} \quad \text{Divide both sides by 2.} \\
 x = 11 \quad \text{The solution is 11.}
 \end{array}$$

You are welcome to solve equations using either a horizontal or a vertical format. Please use the method that you are the most comfortable and confident in applying.

**\*\* Remember to ADD notebook paper after each section to record your Practice Problems. \*\***


**MAT 011 - M2: Notes for Section 2.3A**

**Date** \_\_\_\_\_

**Solving Linear Equations** (*Corresponds to #23 – 30 in M2: Practice 2.2 & 2.3 A*)

***NOTE: Only Objective 1 is covered in Practice 2.3A***

**Write Objective 1:**

Watch the **Objective 1 Video** by clicking on the icon  located after Objective 1 on pg. 95 of the Multimedia Textbook. Take notes from the Video as indicated in the boxes below.

<b>Copy the Linear Equation, and the Steps for Solving it, as Shown in the Objective 1 Video</b>	<b>Copy the 6 Steps Shown in the Video that Outline a General Strategy for Solving a Linear Equation</b>

**Objective 1 Continued:**

<b>Copy &amp; Solve the Example 1 Problem</b> From pg. 96 of the Multimedia Textbook	<b>Copy &amp; Solve the Example 1 You Try It Problem</b> From pg. 96 of the Multimedia Textbook

<b>Copy &amp; Solve the Example 2 Problem</b> From pg. 96 of the Multimedia Textbook	<b>Copy &amp; Solve the Practice 2 Problem</b> After Example 2 on pg. 97 of the Multimedia Textbook
	<p style="text-align: right;"><i>Answer:</i> <math>x = \frac{21}{13}</math></p>



**MAT 011 - M2: Notes for Section 2.3 B**


**Date** \_\_\_\_\_

**Solving Linear Equations (Fractions)**

***NOTE: Objective 1 was covered in M2: Practice 2.3A.***

***This lesson starts with Objective 2, pg. 97.***

**Write Objective 2:**

<b>Copy &amp; Solve the Objective 2 Video Problem</b> Click the icon  on pg. 97 of the Multimedia Textbook	<b>Copy &amp; Solve the Practice 3 Problem</b> After Example 3 on pg. 97 of the Multimedia Textbook
	<p style="text-align: right;"><i>Answer: <math>x = -15</math></i></p>

**Objective 2 Continued:**

<b>Copy &amp; Solve the Example 4 Problem</b> From pg. 98 of the Multimedia Textbook	<b>Copy &amp; Solve the Practice 4 Problem</b> After Example 4 on pg. 98 of the Multimedia Textbook
	<p style="text-align: right;"><i>Answer:</i> <math>y = 3</math></p>

**\*\* Omit Objective 3, pg. 98 \*\***

**Write Objective 4:**

<b>Copy &amp; Solve the Example 6 Problem</b> From pg. 99 of the Multimedia Textbook	<b>Copy &amp; Solve the Example 6 You Try It Problem</b> From pg. 99 of the Multimedia Textbook

<b>Copy &amp; Solve the Example 7 Problem</b> From pg. 99-100 of the Multimedia Textbook	<b>Copy &amp; Solve the Example 7 You Try It Problem</b> From pg. 99 of the Multimedia Textbook

## Optional Graphing Calculator Review: Checking Equations

The Calculator Explorations from *Section 2.3* (pg. 100 of the Multimedia Textbook) is printed below. Follow the directions for learning how to check equations using the graphing calculator. Then use your calculator to check the possible solutions to the 6 problems at the bottom of this page (a key is included to check your work).

### Graphing Calculator Explorations



#### Checking Equations

We can use a calculator to check possible solutions of equations. To do this, replace the variable by the possible solution and evaluate both sides of the equation separately.

*Equation:*  $3x - 4 = 2(x + 6)$

*Solution:*  $x = 16$

$$3x - 4 = 2(x + 6)$$

Original equation

$$3(16) - 4 \stackrel{?}{=} 2(16 + 6)$$

Replace  $x$  with 16.

Now evaluate each side with your calculator.

Evaluate right side:

$$\boxed{2} \boxed{(} \boxed{16} \boxed{+} \boxed{6} \boxed{)} \boxed{=} \text{ or } \boxed{\text{ENTER}} \text{ Display: } \boxed{44} \text{ or } \boxed{\begin{array}{l} 2(16 + 6) \\ 44 \end{array}}$$

Since the left side equals the right side, the solution checks.

#### Use a Calculator to Check the Possible Solutions to Each Equation:

1.  $2x = 48 + 6x$ ;  $x = -12$

2.  $-3x - 7 = 3x - 1$ ;  $x = -1$

3.  $5x - 2.6 = 2(x + 0.8)$ ;  $x = 4.4$

4.  $-1.6x - 3.9 = -6.9x - 25.6$ ;  $x = 5$

5.  $\frac{564x}{4} = 200x - 11(649)$ ;  $x = 121$

6.  $20(x - 39) = 5x - 432$ ;  $x = 23.2$

#### Key for Calculator Explorations Activity

1.  $x = -12$  is the Correct Solution

2.  $x = -1$  is the Correct Solution

3.  $x = 4.4$  is NOT the Solution

4.  $x = 5$  is NOT the Solution

5.  $x = 121$  is the Correct Solution

6.  $x = 23.2$  is the Correct Solution

**MAT 011 - M2: Quiz Prep**

**Date** \_\_\_\_\_

**Preparing for Proctored Quiz #1**

Use the following blank pages to neatly copy each of the 15 problems on the Quiz Prep assignment. **Number each problem, show all the necessary work for solving each problem, and clearly mark the correct solutions.**

**REMEMBER:** You will not be able to take the Proctored Quiz unless your notes are complete and have been approved by your instructor!

*QUIZ PREP CONTINUED*

\*\*\*\*\*

**In order to continue to Mod 3 you must purchase the  
MAT 011 Note-Taking Guide from the College Bookstore.**

**Remember to ADD these notes to the Note Taking  
Guide purchased from the Bookstore.**

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