Name: ____

Big Bend Community College

Emporium Model
Math 99 Course
Workbook

A workbook to supplement
video lectures and online homework by:

Tyler Wallace
Salah Abed
Sarah Adams
Mariah Helvy
April Mayer
Michele Sherwood

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Unit 13:
Compound Inequalities

To work through the unit, you should:

1. Watch a video, as you watch, fill out the workbook (top and example sections).
2. Complete Q1 and Q2 in WAMAP, put your work in the right column of the page.
3. Repeat #1 and #2 with each page until you reach the .
4. Complete the homework assignment on your own paper.
5. Repeat #1 thru #4 until you reach the end of the unit.
6. Complete the review/practice test on your own paper.
7. Take the unit exam.

13.1 Inequalities

13.1a Graphing

Inequalities:

- Less than:
- Less than or equal to:
- Greater than:
- Greater than or equal to:

Graphing on number line: Use ______ for less/greater than and use______when its "or equal to"

Example 1:

Graph $x \geq -3$

Q1:

Example 2:

Give the inequality

Q2:

13.1b Interval Notation

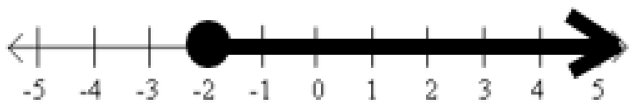
Interval notation:(,)

Use _________ for less/greater than and use ______ when its "or equal to"

∞ and $-\infty$ always use a __________

Example 1:

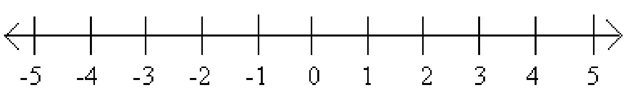
Give interval notation



Q1:

Example 2:

Graph the interval $(-\infty,-1)$



Q2:

13.1c Solving

Solving inequalities is very similar to solving ______________________________(with one exception…)

Three steps with inequalities: _________________, then __________________, then __________________

Example 1:

$$7+5x \le 17$$

Q1:

Example 2:

$$3(x+8)+2>5x-20$$

Q2:

13.1d Multiply or Divide by a Negative

What happens to $5 > -2$ when we multiply both sides by -3? $(-3)5$ ______ $-2(-3)$

When ___________________ or ______________________ by a ____________________ you must

____

Three steps with inequalities: __________________, then ___________________, then ___________________

Example 1:

$$7 - 3x \le 16$$

Q1:

Example 2:

$$4 < -2x + 16$$

Q2:

13.1e Tripartite

Tripartite inequalities:

When solving ________________________________

When graphing ______________________________

Three steps with inequalities: __________________, then ___________________, then ___________________

Example 1:

$$2 \le 5x + 7 < 22$$

Q1:

Example 2:

$$5 < 5 - 4x \le 13$$

Q2:

STOP **You have completed the videos for 13.1 Inequalities. On your own paper, complete the homework assignment.**

13.2 Compound Inequalities

13.2a OR (two directions)

First, we will ______________ each part above the number line, then we will __________ the union (OR)

Symbol for Union:

Example 1:

$$4x+7<-5 \quad \text{OR} \quad -4x-8\leq -20$$

Q1:

Example 2:

$$8x+9<4x-19 \quad \text{OR} \quad 2(4x-8)-2\leq 12x-50$$

Q2:

13.2b OR (one direction)

With an OR if both graphs go the same direction than we use the ___________________________

Example 1:

$4x-6>10$ OR $5-2x\le 7$

Q1:

Example 2:

$3x+5<2x-9$ OR $7x+3\le 5(x-1)$

Q2:

13.2c AND (between)

AND:

First, we will ______________ each part above the number line, then we will use the ________________ (AND)

Example 1:

$6x+5<11$ AND $-7x+2\le 44$

Q1:

Example 2:

$11x-10>3x-2$ AND $2(5x-3)+2\ge 18x-52$

Q2:

13.2d AND (one direction)

With an AND if both graphs go the same direction than we use the ______________________________

Example 1:

$5x-6\geq 26$ AND $3x+1>x-9$

Q1:

Example 2:

$2(4x+4)>6x+2$ AND $7-x\leq 3+x$

Q2:

13.2e Special Cases

OR can give us ____________ of number line or _____________________, in interval notation _____________

AND can give us ___________ of the number line or ________________________, in interval notation _______

Example 1:

$$2x+1<x-3 \text{ OR } 3(x+1)\ge x-15$$

Q1:

Example 2:

$$-3(4x-1)\le 15 \text{ AND } 2x-3\le -9$$

Q2:

You have completed the videos for 13.2 Compound Inequalities. On your own paper, complete the homework assignment.

13.3 Absolute Value Equations

13.3a Two Solutions

$|x| = 5$ so the x could be __________ or __________

What is inside the absolute value can be ______________________ or ______________________

This means we have _________________________________

Example 1:

$$|2x-5| = 7$$

Q1:

Example 2:

$$|7-5x| = 17$$

Q2:

13.3b Isolate the Absolute Value

Before we look at our two equations, we must first ______________________________

Never ___________________ through absolute value!

Never _____________ a term ____________ an absolute value and a term ____________ an absolute value!

Example 1:

$$5 + 2|3x - 4| = 11$$

Q1:

Example 2:

$$-3 - 7|2 - 4x| = -31$$

Q2:

13.3c Dual Absolute Values

With two absolutes, we need ________________________

The first equation is __________________________

The second equation is _____________________________

Example 1:

$$|2x-6|=|4x+8|$$

Q1:

Example 2:

$$|3x-5|=|7x-2|$$

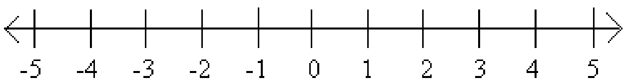
Q2:

You have completed the videos for 13.3 Absolute Value Equations. On your own paper, complete the homework assignment.

13.4 Absolute Value Inequalities

13.4a GreatOR Than

$|x| > 2$ means the ________________ from zero is ______________ than 2.



This is a graph of a compound ____________ inequality. It can be written as ________________________

If the absolute value is greatOR than a number, we set up an ___________

Example 1:

$$|2x-1| \geq 7$$

Q1:

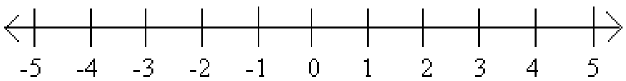
Example 2:

$$|7x+4| > 32$$

Q2:

13.4b Less Than

$|x| < 2$ means the ________________ from zero is ______________ than 2.



This is a graph of a compound ______ inequality. It can be written as ________________________

If the absolute value is less than a number, we set up an ________

Example 1:

$$|3x + 7| < 6$$

Q1:

Example 2:

$$|4x + 1| \le 2$$

Q2:

13.4c Isolate Absolute Value

Before setting up a compound inequality, we must first ____________________ the absolute value!

Beware: with absolute value we cannot _______________ or ________________________________

Example 1:

$$2-7|3x+4|<-19$$

Q1:

Example 2:

$$5+2|4x-1|\leq 17$$

Q2:

You have completed the videos for 13.4 Absolute Value Inequalities. On your own paper, complete the homework assignment.

Congratulations! You made it through the material for Unit 13: Compound Inequalities. It is time to prepare for your exam. On a separate sheet of paper, complete the practice test. Once you have completed the practice test, ask your instructor to take the test. Good luck!

Unit 14:
Systems of Equations

To work through the unit, you should:

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14.1 Systems

14.1a Introduction to Substitution

Substitution: Replace the _______________ with what it _________________________

Example 1:

$$x = -3$$
$$2x - 3y = 12$$

Q1:

Example 2:

$$4x - 7y = 11$$
$$y = -1$$

Q2:

14.1b Substitute an Expression

Just as we can replace a variable with a number, we can also replace it with an ____________________

Whenever we substitute it is important to remember ____________________________

Example 1:

$$y = 5x - 3$$

$$-x - 5y = -11$$

Example 2:

$$2x - 6y = -24$$

$$x = 5y - 22$$

Q1:

Q2:

14.1c Solve for a Variable

To use substitution, we may have to ____________________ a lone variable

If there are several lone variables _____________________________

Example 1:

$$6x + 4y = -14$$

$$x - 2y = -13$$

Example 2:

$$-5x + y = -17$$

$$7x + 8y = 5$$

Q1:

Q2:

14.1d Substitution Special Cases

If the variables subtract out to zero then it means either there is ____
or ____________________________________

Example 1:

$$x + 4y = -7$$

$$21 + 3x = -12y$$

Example 2:

$$5x + y = 3$$

$$8 - 3y = 15x$$

Q1:

Q2:

14.1e Addition/Elimination

If there is no lone variable, it may be better to use ___________________________

This method works by adding the ________________ and _______________ sides of the equations together

Example 1:

$$-8x-3y=-12$$

$$2x+3y=-6$$

Q1:

Example 2:

$$-5x+9y=29$$

$$5x-6y=-11$$

Q2:

14.1f Addition/Elimination and Multiplying an Equation

Addition only works if one of the variables have ____

To get opposites we can multiply ___________________________ of an equation to get the value we want

Be sure when multiplying to have a ___________________ in front of either the ______ or the ______

Example 1:

$$2x - 4y = -4$$

$$4x + 5y = -21$$

Example 2:

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

$$-7x + 12y = 14$$

Q1:

Q2:

14.1g Addition/Elimination and Multiplying Both Equations

Sometimes we may have to multiply __________________ by something to get opposites

The opposite we look for is the __________ of both coefficients

---

Example 1:

$$-6x + 4y = 26$$
$$4x - 7y = -13$$

Example 2:

$$3x + 7y = 2$$
$$10x + 5y = -30$$

Q1:

Q2:

14.1h Addition/Elimination Special Cases

If the variables subtract out to zero than it means either there is ____
or ____

Example 1:

$$2x-4y=16$$

$$3x-6y=20$$

Example 2:

$$-10x+4y=-6$$

$$25x-10y=15$$

Q1:

Q2:

You have completed the videos for 14.1 Systems. On your own paper, complete the homework assignment.

14.2 Systems with Three Variables

14.2a Simple

To solve systems with three variables we must ________________ the ________ variable _________________

This will give us ___________ equations with ___________ variables we can then solve for!

Example 1:

$$3x - 3y + 5z = 16$$

$$2x - 6y - 5z = 35$$

$$-5x - 12y + 5z = 28$$

Example 2:

$$-x + 2y + 4z = -20$$

$$-2x - 2y - 3z = 5$$

$$4x - 2y - 2z = 26$$

Q1:

Q2:

14.2b Multiply to Eliminate

To eliminate a variable, we may have to ________________ one or more equations to get __________________

Example 1:

$$-2x - 2y + 3z = -6$$

$$3x - 3y - 2z = -17$$

$$5x - 4y + 5z = 11$$

Q1:

You have completed the videos for 14.2 Systems with Three Variables. On your own paper, complete the homework assignment.

14.3 Applications of Systems

14.3a Value Comparison

Define the ______________________

Make an equation for the ______________________

Make an equation for the ______________________

Example 1:

Brian has twice as many dimes as quarters. If the value of the coins is $4.95, how many of each does he have?

Example 2:

A child has three more nickels than dimes in her piggybank. If she has $1.95 in her bank, how many of each does she have?

Q1:

Q2:

14.3b Value with Total

Define the ______________________________

Make an equation for the _______________________

Make an equation for the _______________________

Example 1:

Scott has $2.25 in his pocket made up of quarters and dimes. If there are 12 coins, how many of each coin does he have?

Example 2:

If 105 people attended a concert and tickets for adults cost $2.50 while tickets for children cost $1.75 and total receipts for the concert were $228, how many children and how many adults went to the concert?

Q1:

Q2:

14.3c Interest Comparison

Define the ____________________________

Make an equation for the _____________________

Make an equation for the _____________________

Beware: When using a percent, we must _____________________

Example 1:

Sophia invested $1900 in one account and $1500 in another account that paid 3% higher interest rate. After one year she had earned $113 in interest. At what rates did she invest?

Example 2:

Carlos invested $2500 in one account and $1000 in another which paid 4% lower interest. At the end of a year he had earned $345 in interest. At what rates did he invest?

Q1:

Q2:

14.3d Interest with Total Principle

Define the ____________________________

Make an equation for the _____________________

Make an equation for the _____________________

Beware: When using a percent, we must _____________________

Example 1:

A woman invests \$4600 in two different accounts. The first paid 13%, the second paid 12% interest. At the end of the first year she had earned \$586 in interest. How much was in each account?

Example 2:

A bank loaned out \$4900 to two different companies. The first loan had a 4% interest rate; the second had a 13% interest rate. At the end of the first year the loan had accrued \$421 in interest. How much was loaned at each rate?

Q1:

Q2:

You have completed the videos for 14.3 Application of Systems - Value problems. On your own paper, complete the homework assignment.

14.4 Applications of Systems

14.4a Mixture with Starting Amount

Define the ____________________________

Make an equation for the _____________________

Make an equation for the _____________________

Example 1:

A store owner wants to mix chocolate and nuts to make a new candy. How many pounds of chocolate which costs $1.50 per pound should be mixed with 40 pounds of nuts that cost $3.00 per pound to make a mixture worth $2.50 per pound?

Example 2:

You need a 55% alcohol solution. On hand, you have 600 mL of 10% alcohol mixture. You also have a 95% alcohol mixture. How much of the 95% mixture should you add to obtain your desired solution?

Q1:

Q2:

14.4b Mixture with Final Amount

Define the ____________________________

Make an equation for the _____________________

Make an equation for the _____________________

Example 1:

A chemist needs to create 100 mL of a 38% acid solution. On hand she has a 20% acid solution and a 50% acid solution. How many mL of each should she use?

Example 2:

A coffee distributor needs to mix a coffee blend that normally sells for $8.90 per pound with another coffee blend that normally sells for $11.16 per pound, how many pounds of each kind of coffee should they mix if the distributer needs 50 pounds of the new mix to sell for $9.85?

Q1:

Q2:

14.4c Mixture with Final Amount

Pure water is ______________ alcohol

Pure alcohol or acid is _____________alcohol or acid

Example 1:

You need a 55% alcohol solution. On hand, you have a 385 mL of a 70% alcohol mixture. How much pure water will you need to add to obtain the desired solution?

Example 2:

You need a 30% alcohol solution. You have on hand 210 mL of a 10% alcohol solution. How much pure alcohol do you need to add to obtain the desired solution?

Q1:

Q2:

You have completed the videos for 14.4 Applications of Systems – Mixture problems. On your own paper, complete the homework assignment.

Congratulations! You made it through the material for Unit 14: Systems of Equations. It is time to prepare for your exam. On a separate sheet of paper, complete the practice test. Once you have completed the practice test, ask your instructor to take the test. Good luck!

Unit 15:
Radicals

To work through the unit, you should:

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15.1 Simplify Radicals

15.1a Variables

Radical: $\sqrt[n]{a}=b$ where __________________. The n is called the ____________________.

Square Root: $\sqrt{a}=b$ where ____________________. The index on a square root is always _____

Radicals divide the _______________ by the _________________________

The whole number is how many "things" _________ and the remainder is how many "things" _______________

Example 1:

$$\sqrt{a^3}$$

Q1:

Example 2:

$$\sqrt[4]{b^{19}}$$

Q2:

15.1b Several Variables

Work with _______________ variable at a time

Example 1:

$$\sqrt{a^5b^8c^{15}}$$

Q1:

Example 2:

$$\sqrt[4]{a^{13}b^{23}c^{10}d^3e^{36}}$$

Q2:

15.1c Using Prime Factorization

Prime Factorization:

To find a prime factorization we ________________ by ________________

A few prime numbers:

Roots of numbers are difficult, find the ______________________ so that we can divide the _______________ by the ___________________

Example 1:

$$\sqrt[3]{750}$$

Q1:

Example 2:

$$9\sqrt{250x^4yz^5}$$

Q2:

15.1d Binomials

We can only pull ______________________ (separated by ________________________) out of a radical

If we have _______________ (separated by ______ or ___) we must _______________ first!

Example 1:

$$\sqrt{100x^2 - 16x^4}$$

Q1:

Example 2:

$$\sqrt[3]{216x^6 - 27x^9}$$

Q2:

You have completed the videos for 15.1 Simplify Radicals. On your own paper, complete the homework assignment.

15.2 Add, Subtract and Multiply Radicals

15.2a Add Like Radicals

Simplify: $2x - 5y + 4x + 2y$

Simplify: $2\sqrt{3} - 5\sqrt{7} + 4\sqrt{3} + 2\sqrt{7}$

When adding and subtracting radicals we can ___________________________________

Example 1:

$$-4\sqrt{6} + 2\sqrt{11} + \sqrt{11} - 5\sqrt{6}$$

Q1:

Example 2:

$$\sqrt[3]{5} + 3\sqrt{5} - 8\sqrt[3]{5} + 2\sqrt{5}$$

Q2:

15.2b Add with Simplifying

Before adding radicals together ______________________

Example 1:

$$5\sqrt{50x}+5\sqrt{27}-3\sqrt{2x}-2\sqrt{108}$$

Q1:

Example 2:

$$\sqrt[3]{81x^3y}-3y\sqrt[3]{32x^2}+x\sqrt[3]{24y}-\sqrt[3]{500x^2y^3}$$

Q2:

15.2c Multiply Monomial Radical Expressions

Product Rule: $a\sqrt[n]{b} \cdot c\sqrt[n]{d} =$

Always be sure your final answer is ______________________________

Example 1:

$$4\sqrt{6} \cdot 2\sqrt{15}$$

Q1:

Example 2:

$$-3\sqrt[4]{8} \cdot 7\sqrt[4]{10}$$

Q2:

15.2d Multiply Monomial by Binomial Radical Expressions

Recall: $a(b+c)=$

Always be sure your final answer is __________________________

Example 1:

$$5\sqrt{10}\left(2\sqrt{6}-3\sqrt{15}\right)$$

Q1:

Example 2:

$$7\sqrt{3}\left(\sqrt{6}+9\right)$$

Q2:

15.2e Multiply Binomial Radical Expressions

Recall: $(a+b)(c+d)=$

Always be sure your final answer is ___________________________

Example 1:

$$\left(3\sqrt{7}-2\sqrt{5}\right)\left(\sqrt{7}+6\sqrt{5}\right)$$

Q1:

Example 2:

$$\left(2\sqrt[3]{9}+5\right)\left(4\sqrt[3]{3}-1\right)$$

Q2:

15.2f Square Binomial Radical Expression

Recall: $(a+b)^2 =$

Always be sure your final answer is ____________________________

Example 1:

$$\left(\sqrt{6}-\sqrt{2}\right)^2$$

Q1:

Example 2:

$$\left(2+3\sqrt{7}\right)^2$$

Q2:

15.2g. Multiply Conjugates

Recall: $(a+b)(a-b)=$

Always be sure your final answer is ___________________________

Example 1:

$$\left(4+2\sqrt{7}\right)\left(4-2\sqrt{7}\right)$$

Q1:

Example 2:

$$\left(2\sqrt{3}-\sqrt{6}\right)\left(2\sqrt{3}+\sqrt{6}\right)$$

Q2:

You have completed the videos for 15.2 Add, Subtract, and Multiply Radicals. On your own paper complete the homework assignment.

15.3 Rationalize Denominator

15.3a Simplifying with Radicals

Expression with radicals: Always ________________ the ______________________ first

Before __________________________ with fractions, be sure to ______________________ first

Example 1:

$$\frac{15+\sqrt{175}}{10}$$

Q1:

Example 2:

$$\frac{8-\sqrt{48}}{6}$$

Q2:

15.3b Quotient Rule

Quotient Rule: $\sqrt{\frac{a}{b}} =$

It may be helpful to reduce the ________________ first and the ___________________ second

Example 1:

$$\frac{\sqrt{48}}{\sqrt{150}}$$

Q1:

Example 2:

$$\sqrt{\frac{225x^7}{20x^3}}$$

Q2:

15.3c Rationalize Monomial Roots in the Denominator

Rationalize Denominators: Never leave a ____________________ in the ________________________

To clear radicals: _______________ by extra needed factors in denominator (same in numerator!)

It may be helpful to _________________________ first

Hint: ___________________ numbers!

Example 1:

$$\frac{5}{\sqrt[7]{b^2}}$$

Q1:

Example 2:

$$\sqrt[3]{\frac{7}{9a^2b}}$$

Q2:

15.3d Rationalize Binomial Denominators

What does not work: $\dfrac{1}{2+\sqrt{3}} =$

Recall: $\left(2+\sqrt{3}\right)(\qquad) =$

Multiply by the ______________________________

Example 1:

$$\frac{6}{5-\sqrt{3}}$$

Q1:

Example 2:

$$\frac{3-5\sqrt{2}}{4+2\sqrt{2}}$$

Q2:

You have completed the videos for 15.3 Rationalize Denominators. On your own paper, complete the homework assignment.

15.4 Rational Exponents

15.4a Convert

If we divide the exponent by the index, then $\sqrt[n]{a^m} =$

The index is the ______________________________

Example 1:

Write as an exponent: $\sqrt[7]{m^5}$

Example 2:

Write as a radical: $(ab)^{2/3}$

Example 3:

Write as a radical: $x^{-4/5}$

Example 4:

Write as an exponent: $\dfrac{1}{\left(\sqrt[3]{5x}\right)^2}$

Q1:

Q2:

Q3:

Q4:

15.4b Evaluate

To evaluate a rational exponent ________________ to a ___________________________

Example 1:

Evaluate: $32^{2/5}$

Q1:

Example 2:

Evaluate: $27^{-4/3}$

Q2:

15.4c Simplify

Recall Exponent Properties

$a^m a^n =$

$\dfrac{a^m}{a^n} =$

$(ab)^m =$

$\left(\dfrac{a}{b}\right)^m =$

$(a^m)^n =$

$a^0 =$

$a^{-m} =$

$\dfrac{1}{a^{-m}} =$

$\left(\dfrac{a}{b}\right)^{-m} =$

To Simplify:

Example 1:

$$\frac{x^{4/3} y^{2/7} x^{5/4} y^{3/7}}{x^{1/2} y^{6/7}}$$

Example 2:

$$\left(\frac{256 x^{3/2} y^{-1/3}}{x^{1/4} y^{3/2} x^{-5/2}}\right)^{-1/8}$$

Q1:

Q2:

You have completed the videos for 15.4 Rational Exponents. On your own paper, complete the homework assignment

15.5 Radicals of Mixed Index

15.5a Reduce Index

Using rational exponents: $\sqrt[8]{x^6y^2} =$

To reduce the index ______________ the _______________ and the __________________ by the _____________

Without using rational exponents: $\sqrt[8]{x^6y^2} =$

Hint: ____________________ any numbers

Example 1:

$$\sqrt[15]{x^3y^9z^6}$$

Q1:

Example 2:

$$\sqrt[25]{32a^{10}b^5c^{20}}$$

Q2:

15.5b Multiply Mixed Index

Using rational exponents: $\sqrt[3]{a^2b}\cdot\sqrt[4]{ab^2} =$

Get a ____________________ by _______________ the _______________ and _____________________

Without using rational exponents: $\sqrt[3]{a^2b}\cdot\sqrt[4]{ab^2} =$

Hint: ____________________ any numbers

Always be sure your final answer is __________________________

Example 1:

$$\sqrt[4]{m^3n^2p}\cdot\sqrt[6]{mn^2p^3}$$

Q1:

Example 2:

$$\sqrt[3]{4x^2y}\cdot\sqrt[5]{8x^4y^2}$$

Q2:

15.5c Divide Mixed Index

Division with mixed index – get a ____________________________

Hint: ____________________ any numbers

May have to ______________ the denominator (cannot be under a ____________ and under a ________)

Example 1:

$$\frac{\sqrt{ab^3}}{\sqrt[3]{ab^2}}$$

Q1:

Example 2:

$$\frac{\sqrt[4]{2x^3y^2}}{\sqrt[6]{32y^4}}$$

Q2:

You have completed the videos for 15.5 Radicals of Mixed Index. On your own paper, complete the homework assignment.

15.6 Complex Numbers

15.6a Square Roots of Negatives

Define: $\sqrt{-1} =$ and therefore $i^2 =$

Now we can calculate $\sqrt{-25} =$

Expressions with radicals: Always ________________ the ______________________ first

Example 1:

$$\sqrt{-45}$$

Q1:

Example 2:

$$\sqrt{-6} \cdot \sqrt{-10}$$

Q2:

15.6b Simplify Square Roots of Negatives

Before ________________________ with fractions, be sure to _____________________ first

Example 1:

$$\frac{15+\sqrt{-300}}{5}$$

Q1:

Example 2:

$$\frac{20+\sqrt{-80}}{8}$$

Q2:

15.6c Add and Subtract

i works just like ______________________

This means we can ________________________________

Example 1:

$$(5-3i)+(6+i)$$

Q1:

Example 2:

$$(-5-2i)-(3-6i)$$

Q2:

15.6d Powers of $\boldsymbol{i}$

$i^0 =$

$i^1 =$

$i^2 =$

$i^3 =$

___________________ the exponent by __________ and use the ____________________

Example 1:

i^{223}

Q1:

Example 2:

i^{96}

Q2:

15.6e Multiply

i works just like ______________________

Remember $i^2 =$

Example 1:

$$(-3i)(6i)$$

Q1:

Example 2:

$$2i(5-2i)$$

Q2:

Example 3:

$$(4-3i)(2-5i)$$

Q3:

Example 4:

$$(3+2i)^2$$

Q4:

15.6f Rationalize Monomial Denominators

If $i =$ then we can rationalize it by just multiplying by __________

Example 1:

$$\frac{5+3i}{4i}$$

Q1:

Example 2:

$$\frac{2-i}{-3i}$$

Q2:

15.6g Rationalize Binomial Denominators

Similar to other radicals we can rationalize a binomial by multiplying by the ________________________

$(a+bi)(a-bi)=$

Example 1:

$$\frac{4i}{2-5i}$$

Q1:

Example 2:

$$\frac{4-2i}{3+5i}$$

Q2:

You have completed the videos for 15.6 Complex Numbers. On your own paper, complete the homework assignment.

15.7 Complete the Square

15.7a Find c

$a^2 + 2ab + b^2$ is easily factored to ____________________________

To make $x^2 + bx + c$ a perfect square, $c =$

Example 1:

Find c and factor the perfect square:

$$x^2 + 10x + c$$

Example 2:

Find c and factor the perfect square

$$x^2 - 7x + c$$

Example 3:

Find c and factor the perfect square:

$$x^2 - \frac{3}{7}x + c$$

Example 4:

Find c and factor the perfect square:

$$x^2 + \frac{6}{5}x + c$$

Q1:

Q2:

Q3:

Q4:

15.7b Rational Solutions

If $x^2 = 9$ then there are _____ solutions for x, _____ and ________. We can write this as ____________

To complete the square on $ax^2 + bx + c = 0$

1. Separate ________________ and ____________________
2. Divide by __________ (everything)
3. Find the ___________ and ________ to ___________________________

Example 1:

$$x^2 - x - 6 = 0$$

Example 2:

$$3x^2 = 15x - 18$$

Q1:

Q2:

15.7c Irrational and Complex Solutions

If we can't simplify the __________________ we ____________________________ what we can.

Example 1:

$$5x^2 - 3x + 2 = 0$$

Example 2:

$$8x + 32 = 4x^2$$

Q1:

Q2:

You have completed the videos for 15.7 Complete the Square. On your own paper, complete the homework assignment.

15.8 Quadratic Formula

15.8a Finding the Formula

Solve by Completing the Square:

$$ax^2 + bx + c = 0$$

(**Finding the Formula** is useful to know for the test!)

15.8b Using the Formula

If $ax^2 + bx + c = 0$ the $x =$

Example 1:

$$6x^2 + 7x - 3 = 0$$

Q1:

Example 2:

$$5x^2 - x + 2 = 0$$

Q2:

15.8c Make Equation Equal Zero

Before using the quadratic formula, the equation must equal ___________ and be in ________________

That is the equation should look like:

Example 1:

$$2x^2 = 15 - 7x$$

Q1:

Example 2:

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

Q2:

15.8d Missing Terms

If a term is missing, we use ________ in the quadratic formula

Example 1:

$$3x^2 + 54 = 0$$

Q1:

Example 2:

$$5x^2 = 2x$$

Q2:

You have completed the videos for 15.8 Quadratic Formula. On your own paper, complete the homework assignment.

Congratulations! You made it through the material for Unit 15: Radicals. It is time to prepare for your exam. On a separate sheet of paper, complete the practice test. Once you have completed the practice test, ask your instructor to take the test. Good luck!

Unit 16:
College Algebra Topics

To work through the unit, you should:

1. Watch a video, as you watch, fill out the workbook (top and example sections).
2. Complete Q1 and Q2 in WAMAP, put your work in the right column of the page.
3. Repeat #1 and #2 with each page until you reach the .
4. Complete the homework assignment on your own paper.
5. Repeat #1 thru #4 until you reach the end of the unit.
6. Complete the review/practice test on your own paper.
7. Take the unit exam.

16.1 Multiply and Divide Rational Expressions

16.1a Review Multiply and Divide Fractions

To multiply we ___________________ common _______________________ then multiply ___________________

Division is the same, with one extra step at the start: _________________ by the _________________________

Example 1:

$$\frac{6}{35} \square \frac{21}{10}$$

Q1:

Example 2:

$$\frac{5}{8} \div \frac{10}{3}$$

Q2:

16.1b Multiply or Divide Rational Expressions

To multiply we ________________ common ____________________ then multiply ________________

This means we must first ____________________

Division is the same, with one extra step at the start: _______________ by the ______________________

Example 1:

$$\frac{x^2+3x+2}{4x-12} \square \frac{x^2-5x+6}{x^2-4}$$

Q1:

Example 2:

$$\frac{3x^2+5x-2}{x^2+3x+2} \div \frac{6x^2+x-1}{2x^3-6x^2-8x}$$

Q2:

16.1c Multiply and Divide Rational Expressions

To divide:

To multiply we ________________ common ____________________ then multiply _________________

This means we must first ____________________

Example 1:

$$\frac{x^2+3x-10}{x^2+6x+5}\cdot\frac{2x^2-x-3}{2x^2+x-6}\div\frac{8x+20}{6x+15}$$

Q1:

Example 2:

$$\frac{x^2-1}{x^2-x-6}\cdot\frac{2x^2-x-15}{3x^2-x-4}\div\frac{2x^2+3x-5}{3x^2+2x-8}$$

Q2:

You have completed the videos for 16.1 Multiply and Divide Rational Expressions. On your own paper, complete the homework assignment.

16.2 Add and Subtract Rational Expressions

16.2a Review LCD/LCM of Numbers with Prime Factorization

Prime Factorization:

To find the LCD/LCM use __________ factors with ______________ exponents

Example 1:

Find the LCD/LCM:
20 and 36

Q1:

Example 2:

Find the LCD/LCM:
$18, 54$ and 81

Q2:

16.2b LCD/LCM of Monomials

To find the LCD/LCM with variables use __________ factors with ______________ exponents

Example 1:

Find the LCD/LCM:
$5x^3y^2$ and $4x^2y^5$

Q1:

Example 2:

Find the LCD/LCM:
$7ab^2c$ and $3a^4b$

Q2:

16.2c LCD/LCM of Polynomials

To find the LCD/LCM with polynomials use ______________ factors with ____________________ exponents

This means we must first ______________________

Example 1:

Find the LCD/LCM:
$x^2+3x-18$ and $x^2+4x-21$

Q1:

Example 2:

Find the LCD/LCM:
$x^2-10x+25$ and x^2-x-20

Q2:

16.2d Review Adding and Subtracting Fractions

To add or subtract we ____________ the denominators by ____________ by the missing _________________

Example 1:

$$\frac{5}{21}+\frac{7}{15}$$

Q1:

Example 2:

$$\frac{8}{14}-\frac{3}{10}$$

Q2:

16.2e Add and Subtract with Common Denominator

Add the ________________ and keep the __________________

When subtracting we will first ________________ the negative

Don't forget to ________________

Example 1:

$$\frac{x^2+4x}{x^2-2x-15}+\frac{x+6}{x^2-2x-15}$$

Q1:

Example 2:

$$\frac{x^2+2x}{2x^2-9x-5}-\frac{6x+5}{2x^2-9x-5}$$

Q2:

16.2f Add and Subtract with Different Denominators

To add or subtract we ____________ the denominators by ____________ by the missing __________________

This means we must first ______________________ the denominators

Example 1:

$$\frac{2x}{x^2-9}+\frac{5}{x^2+x-6}$$

Q1:

Example 2:

$$\frac{2x+7}{x^2-2x-3}-\frac{3x-2}{x^2+6x+5}$$

Q2:

You have completed the videos for 16.2 Add and Subtract Rational Expressions. On your own paper, complete the homework assignment.

16.3 Compound Fractions
16.3a Numbers

Compound/Complex Fractions:

Clear ____________________ by multiplying each ________ by the _________________________ of everything

Example 1:

$$\frac{\frac{3}{4}+\frac{5}{6}}{\frac{1}{2}-\frac{4}{3}}$$

Q1:

Example 2:

$$\frac{\frac{1}{2}+2}{1+\frac{9}{4}}$$

Q2:

16.3b Monomials

Recall: To find the LCD with variables, use the ________________ exponents

Be sure to check for ___________________ by _____________________ the numerator and denominator.

Example 1:

$$\frac{1-\frac{9}{x^2}}{\frac{1}{x}+\frac{3}{x^2}}$$

Q1:

Example 2:

$$\frac{\frac{1}{y^3}-\frac{1}{x^3}}{\frac{1}{x^2y^3}-\frac{1}{x^3y^2}}$$

Q2:

16.3c Binomials

Recall: To find the LCD with variables, use the ______________________ exponents.

Be sure to check for ___________________ by _____________________ the numerator and denominator.

Example 1:

$$\frac{\frac{5}{x-2}}{3+\frac{2}{x-2}}$$

Q1:

Example 2:

$$\frac{\frac{x}{x-9}+\frac{5}{x+9}}{\frac{x}{x+9}-\frac{5}{x-9}}$$

Q2:

16.3d Negative Exponents

Recall: $5x^{-3} =$

If there is any _______ or __________ we can't just _______ terms. Instead make ____________________

Example 1:

$$\frac{1+10x^{-1}+25x^{-2}}{1-25x^{-2}}$$

Q1:

Example 2:

$$\frac{8b^{-3}+27a^{-3}}{4a^{-1}b^{-3}-6a^{-2}b^{-2}+9a^{-3}b^{-1}}$$

Q2:

You have completed the videos for 16.3 Compound Fractions. On your own paper, complete the homework assignment.

16.4 Rational Equations

16.4a Clear Denominator

Recall: $\frac{3}{4}x - \frac{1}{2} = \frac{5}{6}$

Clear fractions by multiplying each ____________________ by the ________________________

Example 1:

$$\frac{5}{x} = \frac{3}{7x} - 4$$

Q1:

Example 2:

$$\frac{4}{x+5} + x = \frac{-2}{x+5}$$

Q2:

16.4b Factoring Denominator

To identify all the factors in the __________ we may have to ________________ the ____________________

Example 1:

$$\frac{x}{x-6}+\frac{1}{x-7}=\frac{-3x-8}{x^2-13x+42}$$

Q1:

Example 2:

$$\frac{2}{x+3}-\frac{9x}{x^2-9}=\frac{1}{x-3}$$

Q2:

16.4c Extraneous Solutions

Because we are working with fractions, the ____________ cannot be ______________

Example 1:

$$\frac{x}{x-8}-\frac{2}{x-4}=\frac{-3x+56}{x^2-12x+32}$$

Q1:

Example 2:

$$\frac{x}{x-2}+\frac{2}{x-4}=\frac{4x-12}{x^2-6x+8}$$

Q2:

You have completed the videos for 16.4 Rational Equations. On your own paper, complete the homework assignment.

16.5 Equations with Radicals

16.5a Odd Roots

The opposite of taking a root is to do an ______________________

$\sqrt[3]{x}=4$ then $x=$ (Note: This only works for an _____________ index)

Example 1:

$$\sqrt[3]{2x-5}=6$$

Q1:

Example 2:

$$\sqrt[5]{4x-7}=2$$

Q2:

16.5b Even Roots

The opposite of taking a root is to do an ______________________

With even roots we must __________ the answer in the original equation! (called ___________________)

Recall: $(a+b)^2 =$

Example 1:

$$x = \sqrt{5x+24}$$

Q1:

Example 2:

$$\sqrt{40-3x} = 2x-5$$

Q2:

16.5c Isolate Radical

IMPORTANT: Before we can clear a radical it must first be ___________________________

Example 1:

$$4+2\sqrt{2x-1}=2x$$

Example 2:

$$2\sqrt{5x+1}-2=2x$$

Q1:

Q2:

You have completed the videos for 16.5 Equations with Radicals. On your own paper, complete the homework assignment.

16.6 Equations with Exponents

16.6a Odd Exponents

The opposite of taking an exponent is to do a __________________

If $x^3 = 8$, then $x =$ (Note: This only works for an _____________ exponent)

Example 1:

$$(3x+5)^5 = 32$$

Q1:

Example 2:

$$(2x-1)^3 = 64$$

Q2:

16.6b Even Exponents

Consider: $(5)^2 =$ and $(-5)^2 =$

When we clear an even exponent, we have ________________________________

Example 1:

$$(5x-1)^2 = 49$$

Q1:

Example 2:

$$(3x+2)^4 = 81$$

Q2:

16.6c Isolate Exponent

IMPORTANT: Before we can clear an exponent, it must first be ______________________

Example 1:

$$4-2(2x+1)^2=-46$$

Example 2:

$$5(3x-2)^2+6=46$$

Q1:

Q2:

16.6d Rational Exponents

To multiply to one: $\frac{a}{b}\left(\frac{\qquad}{}\right)=1$

We clear a rational exponent by using a ______________________________

Recall $a^{m/n} =$

Recall: Check if original rational exponent has ________________________

Recall: Two solutions if original rational exponent has ________________________

Example 1:

$$(3x-6)^{3/2}=64$$

Q1:

Example 2:

$$(5x+1)^{4/5}=16$$

Q2:

You have completed the videos for 16.6 Equations with Exponents. On your own paper, complete the homework assignment.

16.7 Rectangle Problems

16.7a Area Problems

Area of a rectangle:

To help visualize the rectangle, ____

There are three ways to solve any quadratic equation

1.
2.
3.

Example 1:
The length of a rectangle is 2 ft longer than the width. The area of the rectangle is 48 ft^2. What are the dimensions of the rectangle?

Q1:

Example 2:
The area of a rectangle is 72 cm^2. If the width is 6 cm less than the length, what are the dimensions of the rectangle?

Q2:

16.7b Perimeter Problems

Perimeter of a rectangle:

Tip: Solve the ____________ equation for a variable and ____________ in the ____________ equation.

Example 1:
The area of a rectangle is $54m^2$. If the perimeter is 30 meters, what are the dimensions of the rectangle?

Q1:

Example 2:
The perimeter of a rectangle is 22 inches. If the area of the same rectangle is $24\ in^2$, what are the dimensions?

Q2:

16.7c Bigger

We may have to draw __________________ rectangles

Multiply/Add to the ____________________ to make it equal the ___________________ rectangle

Example 1:
Each side of a square is decreased 6 inches. When this happens, the area of the larger square is 16 times the area of the smaller square. How many inches is the side of the original square?

Q1:

Example 2:
The length of a rectangle is 9 feet longer than it is wide. If each side is increased 9 feet, then the area is multiplied by 3. What are the dimensions of the original rectangle?

Q2:

16.7d Frames

To help visualize the frame ____________________________

Remember the frame is on the ___________ and _______________ also the ___________ and _______________

Example 1:
A frame measures 13 inches by 10 inches and is of uniform width. If the area of the picture inside is 54 square inches, what is the width of the frame?

Q1:

Example 2:
An 8-inch by 12-inch drawing has a frame of uniform width around it. The area of the frame is equal to the area of the picture. What is the width of the frame?

Q2:

16.7e Percent of a Field

Clearly identify the area of the ________________ and ___________________ rectangles!

Be careful with ________________, is it talking about the ___________, ___________, or ________?

Example 1:
A man mows his 40 ft by 50 ft rectangular lawn in a spiral pattern starting from the outside edge. By noon he is 90% done. How wide of a strip has he cut around the outside edge?

Q1:

Example 2:
A woman has a 50 ft by 25 ft rectangular field that she wants to increase by 68% by cultivating a strip of uniform width around the current field. How wide of a strip should she cultivate?

Q2:

You have completed the videos for 16.7 Rectangle Problems. On your own paper, complete the homework assignment.

16.8 Work Problems

16.8a One Unknown Time

Adam does a job in 4 hours. Each hour he does ______ of the job.

Betty does a job in 12 hours. Each hour she does ______ of the job.

Together, each hour they do ______________________ of the job

This means together it would take them _________ hours to do the entire job.

Work equation:

Example 1:
Catherine can paint a house in 15 hours. Dan can paint it in 30 hours. How long will it take them working together?

Q1:

Example 2:
Even can clean a room in 3 hours. If his sister Faith helps, it takes them $2\frac{2}{5}$ hours. How long will it take Faith working alone?

Q2:

16.8b Two Unknown Times

Be sure to clearly identify who is the ___________________

Example 1:
Tony does a job in 16 hours less time than Marissa, and they can do it together in 15 hours. How long will it take each to do the job alone?

Q1:

Example 2:
Alex can complete his project in 21 hours less than Hillary. If they work together it can get done in 10 hours. How long does it take each working alone?

Q2:

You have completed the videos for 16.8 Work Problems. On your own paper, complete the homework assignment.

16.9 Distance and Revenue Problems

16.9a Simultaneous Products

Simultaneous product: ____________ equations with ____________ variables that are _______________________

To solve: __________________ both by the same _______________________ Then _____________________.

Example 1:

$$xy = 72$$

$$(x-5)(y+2) = 56$$

Q1:

16.9b Revenue

Revenue Equation:

Beware: Profit =

To solve: Divide by what we ____________________

Example 1:
A group of college students bought a couch for \$80. However, five of them failed to pay their share so the others had to each pay \$8 more. How many students were in the original group?

Example 2:
A merchant bought several pieces of silk for \$70. He sold all but two of them at a profit of \$4 per piece. His total profit was \$18. How many pieces did he originally purchase?

Q1:

Q2:

16.9c Distance

Distance Equation:

To solve: Divide by what we ____________________

Example 1:

A man rode his bike to a park 60 miles away. On the return trip he went 2 mph slower which made the trip take 1 hour longer. How fast did he ride to the park?

Example 2:

After driving through a construction zone for 45 miles, a woman realized that if she had just driven 6 mph faster, she would have arrived 2 hours sooner. How fast did she drive?

Q1:

Q2:

16.9d Streams and Wind

Downwind/stream:

Upwind/stream:

Example 1:

Zoe rows a boat downstream for 80 miles. The return trip upstream took 12 hours longer. If the current flows at 3 mph, how fast does Zoe row in still water?

Example 2:

Darius flies a plane against a headwind for 5084 miles. The return trip with the wind took 20 hours less time. If the wind speed is 10 mph, how fast does Darius fly the plane when there is no wind?

Q1:

Q2:

You have completed the videos for 16.9 Distance and Revenue Problems. On your own paper, complete the homework assignment.

Congratulations! You made it through the material for Unit 16: College Algebra Topics. It is time to prepare for your exam. On a separate sheet of paper, complete the practice test. Once you have completed the practice test, ask your instructor to take the test. Good luck!

Unit 17:
Functions

To work through the unit, you should:

1. Watch a video, as you watch, fill out the workbook (top and example sections).
2. Complete Q1 and Q2 in WAMAP, put your work in the right column of the page.
3. Repeat #1 and #2 with each page until you reach the .
4. Complete the homework assignment on your own paper.
5. Repeat #1 thru #4 until you reach the end of the unit.
6. Complete the review/practice test on your own paper.
7. Take the unit exam.

17.1 Evaluate Functions

17.1a Functions

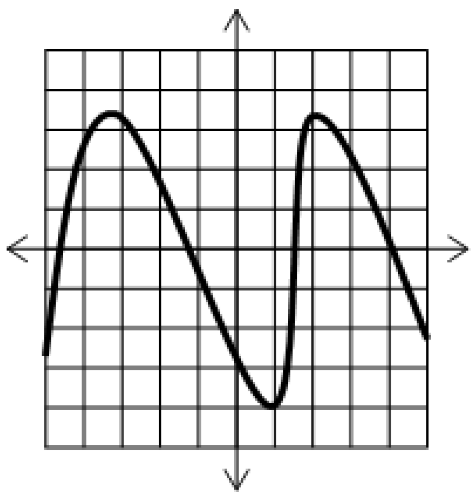
Function:

If it is a function, we often write __________ which is read _________________________________

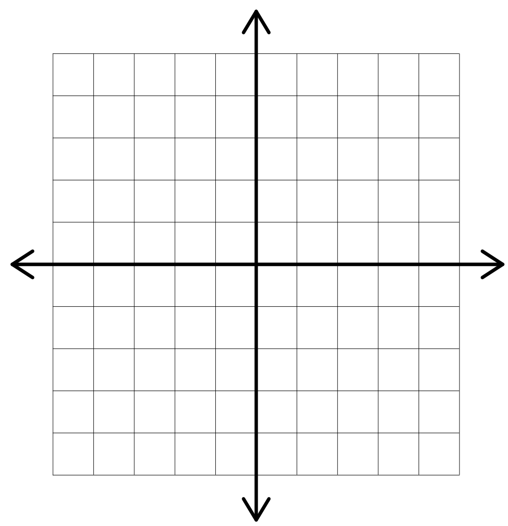
A graph is a function if it passes the __________________________, or each ___________ has at most one ____

Example 1:

Is the graph a function?

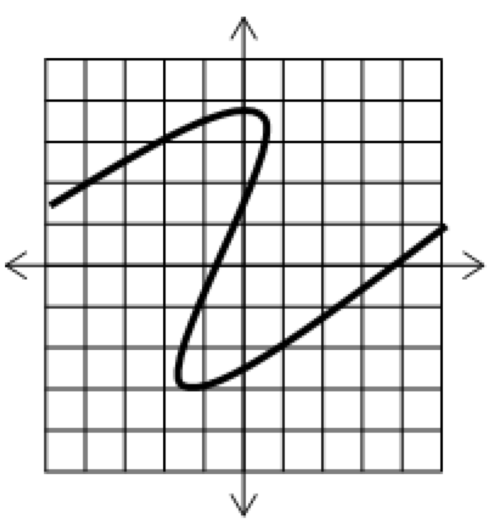


Q1:

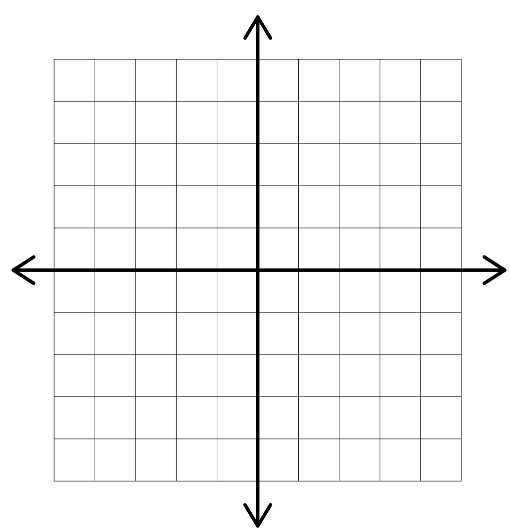


Example 2:

Is the graph a function?



Q2:



17.1b Function Notation

Function notation:

What is inside of the function ________________________ the ___________________________

Example 1:

$$f(x) = -x^2 + 2x - 5$$

Find $f(3)$

Q1:

Example 2:

$$g(x) = \sqrt{2x+5}$$

Find $g(20)$

Q2:

17.1c Evaluate Function at an Expression

When replacing a variable, we always use ___________________________

What is inside of the function _________________________ the ____________________________

Example 1:

$$f(x)=\sqrt{2x}+3x$$

Find $f\left(8x^2\right)$

Q1:

Example 2:

$$p(n)=n^2-2n+5$$

Find $p(n-3)$

Q2:

17.1d Domain

Domain:

Fractions:

Even Radicals:

Example 1:

Find the domain:

$$f(x) = 3\sqrt[4]{2x-6} + 4$$

Q1:

Example 2:

Find the domain:

$$g(x) = 3|2x+7|^2 - 4$$

Q2:

Example 3:

Find the domain:

$$h(x) = \frac{x-1}{x^2 - x - 2}$$

Q3:

You have completed the videos for 17.1 Evaluate Functions. On your own paper, complete the homework assignment.

17.2 Operations on Functions

17.2a Add Functions

Add Functions: $(f+g)(x)=$

With a number we will ________________ both, then ______________ the results

With a variable we will ________________ the two functions ______________ Use ______________!

Example 1:

$$f(x)=x-4$$

$$g(x)=x^2-6x+8$$

Find $(f+g)(-2)$

Q1:

Example 2:

$$f(x)=x^2-5x$$

$$g(x)=x-5$$

Find $(f+g)(x)$

Q2:

17.2b Subtract Functions

Subtract Functions: $(f-g)(x)=$

With a number we will __________________ both, then _______________ the results

With a variable we will __________________ the two functions ________________. Use _______________!

Example 1:

$$f(x)=x-4$$

$$g(x)=x^2-6x+8$$

Find $(f-g)(-2)$

Q1:

Example 2:

$$f(x)=x^2-5x$$

$$g(x)=x-5$$

Find $(f-g)(x)$

Q2:

17.2c Multiply Functions

Multiply Functions: $(f \cdot g)(x) =$

With a number we will ________________ both, then ____________________ the results

With a variable we will ___________ the two functions _____________________. Use _____________!

Example 1:

$$f(x) = x - 4$$

$$g(x) = x^2 - 6x + 8$$

Find $(f \cdot g)(-2)$

Q1:

Example 2:

$$f(x) = x^2 - 5x$$

$$g(x) = x - 5$$

Find $(f \cdot g)(x)$

Q2:

17.2d Divide Functions

Divide Functions: $\left(\frac{f}{g}\right)(x) =$

With a number we will __________________ both, then ________________ the results

With a variable we will ____________ the two functions _______________________. Use _______________!

Beware of ________________ of fractions, the _________________ cannot be ________________

Example 1:

$$f(x) = x - 4$$
$$g(x) = x^2 - 6x + 8$$

Find $\left(\frac{f}{g}\right)(-2)$

Q1:

Example 2:

$$f(x) = x^2 - 5x$$
$$g(x) = x - 5$$

Find $\left(\frac{f}{g}\right)(x)$

Q2:

17.2e Composition of Functions

Composition of Functions:

$(f \circ g)(x) =$

With numbers, __________________ the _______________ and put _________________ in ________________

With a variable, put the _________________ in for the ______________________ in the ___________________

Example 1:

$$f(x) = \sqrt{x+6}$$
$$g(x) = x+3$$

$(f \circ g)(7) =$

$g\left[f(7)\right] =$

Example 2:

$$p(x) = x^2 + 2x$$
$$r(x) = x+3$$

$(p \circ r)(x) =$

$r\left[p(n)\right] =$

Q1:

Q2:

17.2f Compose a Function with Itself

A function can be composed with _______________

Example 1:

$$f(x) = 2x - 4$$

Find $(f \circ f)(-2)$

Q1:

Example 2:

$$g(x) = x^2 - 3x$$

Find $g\left[g(x)\right]$

Q2:

17.2g Composition of Several Functions

If we are composing several functions, start in the ____________________ and work ________________

Example 1:

$$f(x) = x + 2$$
$$g(x) = x^2 - 5$$
$$h(x) = \sqrt{3x}$$

Find $(f \circ g \circ h)(2)$

Example 2:

$$f(x) = x + 2$$
$$g(x) = x^2 - 5$$
$$h(x) = \sqrt{3x}$$

Find $(f \circ g \circ h)(a)$

Q1:

Q2:

You have completed the videos for 17.2 Operations on Functions. On your own paper, complete the homework assignment.

17.3 Inverse Functions

17.3a Show Functions are Inverses

Inverse Function:

To test if functions are inverses, calculate ________ and ______________, the answer to both should be _____

Example 1:

Are they inverses?

$$f(x) = 3x - 8$$

$$g(x) = \frac{x}{3} + 8$$

Example 2:

Are they inverses?

$$f(x) = \frac{5}{x-3} + 6$$

$$g(x) = \frac{5}{x-6} + 3$$

Q1:

Q2:

17.3b Finding an Inverse Function

To find an inverse function _______________ the _________ and _________, then solve for ______.

(the _________ is the y!)

Example 1:

Find the inverse:

$$h(x) = \frac{-3}{x-1} - 2$$

Example 2:

Find the inverse:

$$g(x) = 5\sqrt[3]{x-6} + 4$$

Q1:

Q2:

17.3c Inverse of Rational Functions

Clear fractions by ____________________________

Put the terms with ________ on one side and ______________________ on the other side

Factor out the ______ and ____________________ to get it alone

---

Example 1:

Find the inverse:

$$f\left(x\right)=\frac{2x-5}{x+3}$$

Example 2:

Find the inverse:

$$g\left(x\right)=\frac{5x+1}{2x-5}$$

Q1:

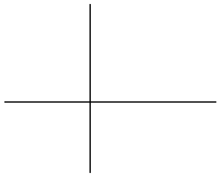
Q2:

You have completed the videos for 17.3 Inverse Functions. On your own paper, complete the homework assignment.

17.4 Graphs of Quadratic Functions

17.4a Key Points

Quadratic Graph:

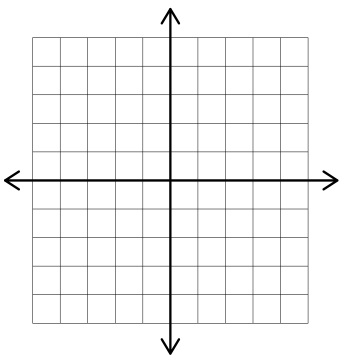


Key points:

Example 1:

Graph the function:

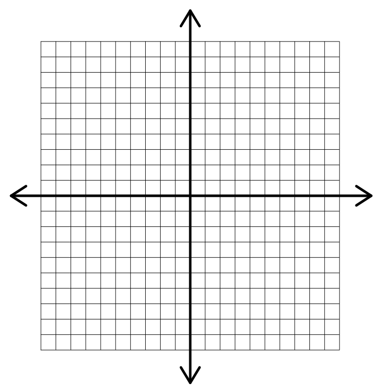
$$f(x) = x^2 - 2x - 3$$



Example 2:

Graph the function

$$f(x) = -3x^2 + 12x - 9$$



Q1:

Q2:

You have completed the videos for 17.4 Graphs of Quadratic Functions. On your own paper, complete the homework assignment.

Congratulations! You made it through the material for Unit 17: Functions. It is time to prepare for your exam. On a separate sheet of paper, complete the practice test. Once you have completed the practice test, ask your instructor to take the test. Good luck!

Unit 18:
Proficiency Exam #3

To work through this unit, you should:

1. Complete the review/practice tests on your own paper.
2. Take the (two part) unit exam.