# Week 23 Algebra 1 Assignment:

Day 1: pp. 433-434 #2-14 even, 17-21
Day 2: p. 437 #1-9 odd, 11-18, 21-25
Day 3: pp. 440-441 #1-15 odd, 16-39
Day 4: Chapter 10 test
Day 5: pp. 445-446 #1-18, 21-25

## Notes on Assignment:

### Pages 433-434:

General notes for this section: When your denominator is a binomial instead of a single term, you must multiply by 1 in the form of $\frac{conjugate}{conjugate}$. The conjugate of the denominator is the exact same binomial, but with the opposite sign in the middle.

Example: The conjugate of $3-\sqrt{5}$ is $3+\sqrt{5}$.

If you have the fraction $\frac{2+\sqrt{3}}{3-\sqrt{5}}$, then to rationalize the denominator you must multiply the fraction by $\frac{3+\sqrt{5}}{3+\sqrt{5}}$. This gives us

$$\frac{2+\sqrt{3}}{3-\sqrt{5}}\cdot\frac{3+\sqrt{5}}{3+\sqrt{5}}=\frac{(2+\sqrt{3})(3+\sqrt{5})}{(3-\sqrt{5})(3+\sqrt{5})}=\frac{6+2\sqrt{5}+3\sqrt{3}+\sqrt{15}}{4}$$

Work to show:
#2: Answer only
#4-14: Write the problem, multiply by 1 in some form, and simplify.
#17-21: Show any work needed.
#18: Graph

#4: Multiply by $\frac{3+\sqrt{6}}{3+\sqrt{6}}$. Put ( ) around each binomial and multiply carefully using FOIL.

#8: Simplify the $\sqrt{4}$ before you start this problem.

#14: Make sure to simplify all radicals in your final answer.

#20: You must use the Pythagorean Theorem, but be careful! Put ( ) around each quantity so you will remember to use FOIL to square each side.

#21: Because the denominator is a cubed root, you need to multiply by 2 buddies top and bottom to rationalize it.

## Page 437:

General notes for this section: When solving a radical equation, follow these steps:

1. Isolate the radical.
2. Square both sides of the equation.
3. Solve the resulting equation.
4. Check. (Might have extraneous solutions)

Work to show:

#1-18: Write the problem down, then solve using the steps above.
#21-25: Show any work needed.
#23: Graph
#25: Long division

#5: Get rid of the 3 before squaring both sides.

#11: After you get rid of the +7, you also need to divide both sides by 3 to get rid of the 3 in front of the radical before you square both sides.

#17: This answer is a fraction.

#21: You need to get a common denominator in order to add these fractions.

#23: Graph this on the xy-plane.

#24: Factor this as the difference of squares.

#25: This is a long division problem.

## Pages 440-441:

Chapter Review – no notes.

Work to show:

#1-10: Show any work needed. Answers only is ok.
#11-30: Write the problem and show work.
#31-33: Write the numbers in the distance formula and simplify.
#34-36: Write the equation and show work solving.
#37-39: You do not have to use 5 steps for these.

## Chapter 10 test:

For the test:

- Write radical expressions using exponents.
- Write exponential expressions using radicals.
- Use the Pythagorean Theorem to solve right triangles.
- Find the distance between 2 points. (Know the distance formula!)
- Simplify radicals.
- Multiply radicals.
- Add and subtract radicals.
- Rationalize denominators.
- Solve radical equations.
- One word problem.

## Pages 445-446:

General notes on this section: When you have a product equal to zero, then one (or more) of the factors must equal zero.

Work to show:

#1-15: Write down what it looks like when you set each factor equal to zero. Then solve those resulting equation.
#16-18: Show the equation factored and then show the same work as the previous problems.
#21-25: Show work as needed.
#24: Graph

#1-12: For these problems, set each factor equal to zero and solve each resulting equation.

#5: You have 2x=0 or x+7=0 for your equations.

#10-11: These problems have 3 factors being multiplied to get zero. Set each factor equal to zero and solve. You get 3 equations.

#13-15: Be careful solving these equations once you have set each factor equal to zero. You answers will have some fractions in them.

#16: Factor the left side of the equal sign using backwards FOIL. Then set each factor equal to zero as you have been doing for the other problems.

#17-18: These problems also need the left side factored so that you have a product of factors and can continue as you have with the other problems.

#21: I feel like a broken record, but pull out the GCF first!