# Week 20 Algebra 2 Assignment:

Day 1:  pp. 382-383 #1-8, 9-13 odd
Day 2:  pp. 385-387 #9-16 ( 5 steps)
Day 3:  pp. 390-391 #2-28 even
Day 4:  pp. 390-391 #1-29 odd
Day 5:  Chapter 9 Test


## Notes on Assignment:


## Pages 383-383:


General notes for this section:

> Direct Variations:  When you see the words "*varies directly as*" you translate "$= k$".
> Inverse Variations:  When you see the words "*varies inversely as*" you translate "$= \underline{k}$".
> Joint Variation:  When you see the words "*varies jointly as*" you translate "$= k$" and
> write down both variables after the *k*.

> In general, anything varying directly gets multiplied times the *k* and anything varying
> inversely goes underneath the *k*.

> For all of the variations, you must be given one full set of values so that you can
> solve for k.  After that you have your general variation equation and you can find any
> missing value given the other value(s) represented in the equation.


<span style="color:blue">Work to show:</span>
<span style="color:blue">#1-13: Show the translation, work to find k, and work to find any other values asked for in the problem.</span>

#1:  Translate this as y = kx.  You are given one complete set of values (y = 30 and x = 5).
Put those in and find out what k is.  Put this back in for k in your equation and you
have your general direct variation equation.  Now you can put in 8 for x and find y.

#7:  The formula for interest is really $I = prt$.  (interest $=$ principal x rate x time).  For this
problem it says that it is for *annual* interest, which means the time = 1.  So, think of
this equation as $I = 1pr$.  If this is the case, then k = 1.  Translate this equation into
the words that the equation would have come from.

#9-13:  You do not have to do these as 5-step word problems.  But be careful as you
translate!

## Pages 385-387:

General notes for this section:  For work problems, step 2 will look like this:

$$\frac{time\ doing\ job}{time\ to\ do\ job\ alone} + \frac{time\ doing\ job}{time\ to\ do\ job\ alone} = 1\ job$$

Each worker gets a separate fraction.  In the denominator put how long it would take each to do the job alone.  In the numerator, put how long each actually worked on the job.  The sum of the fractions always equals 1 job.

Once you get it set up, write down your LCM and your restrictions on x (if any) and solve the equation.

#9-12:  Some of these answers will be fractions.  You can leave them in fractional form.

#9:  Your step 2 should look like this:
$$\overset{Paul}{\frac{4}{6}} + \overset{Bill}{\frac{4}{x}} = 1$$

#13-16:  If you have fractions of hours, you must change the fractional part to hours. To do this, multiply your fractional part times 60.

#13:  You have 3 workers for this problem so you will have 3 fractions.

#15:  You will have to approximate the number of minutes, since your fraction does not multiply times 60 without a remainder.

#16:  For this problem, you have 2 pipes working *for* the job and 1 working *against* the job. The fraction of the one working *against* the job must be subtracted!

## Pages 390-391:

Chapter Review – no notes.

#11-20: Factor the denominators as you write the problem down. Write down
 LCM = _____ and fill it in. For addition and multiplication problems, show
 what you are multiplying each fraction by to get the LCM. Do the addition or
 subtraction and then simplify your answer if possible. For multiplication ad
 division problems, show the canceling ad then simplify.

#21-27: You can factor the denominators as you write them down if you want. I
 should see "x ≠ _____" and also "LCM = _____" written down. I
 should also see the LCM written beside each fraction.

#28-29: 5 step word problems


## Chapter 9 Test:

For the test:
- Simplify rational expressions (factor and cancel)
- Multiply rational expressions (factor and cancel)
- Divide rational expressions (change to multiplication and then factor and cancel)
- Add and subtract rational expressions (get a common denominator)
- Simplify complex rational expressions (2 methods were shown)
- Determine for what values a fraction is undefined (by looking at the values that make the denominator equal 0)
- Solve equations with rational expressions (Clear the equations first by multiplying through by the LCM)
- 2 word problems (one of them is a work problem)