Math 101 – Chapter 5

HOMEWORK ASSIGNMENTS

(with the exception of Sections 5.4, all homework assignments should be submitted electronically by means of KC Blackboard)

Section 5.1     Problems:  1, 5, 14a, 18, 21a, 26, 27, 33, 35 & 38

Section 5.2     Problems:  5, 19, 21, 23, 25, 26, 27, 29, 31, & 33

Section 5.3     Problems:  1, 5, 9, 11, 13, 15, 19, 21, 23, 29, 31, 33, 35, 37, 39, 41, 43, 47, 48, 49, 50, 51, 53, 54, & 55

Section 5.4     THESE PROBLEMS MUST BE WORKED OUT IN DETAIL ON THE SHEETS PROVIDE BY THE INSTRUCTOR.

Problems:  2

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Section 5.5     Problems:  1, 5, 11, 13, 15, 17, 21x, 21z, 25, & 27
Study Times and Test Grades. A mathematics instructor asserted that students' test grades are directly proportional to the amount of time spent studying. Brent studies 15 hours for a final exam and gets a score of 75. At this rate, what score would he receive if he had studied for 18 hours?

1. a. Print the step label next to the number. 1. _____________________________
   (fill in the step label)
b. Re-read the problem until you can identify the TWO sets of variables.

Set A: ________________________
(create a label Set A)

Set B: ________________________
(creating a label Set B)

d. Set up a CRITERIA BOX and carefully place the given data in the correct cells. (This means (a) label the columns of the criteria box [Set A label in the left-hand column and Set B label in the right-hand column] and (b) then place the data into the proper cells of the criteria box)

2. a. Print the step label next to the number.

2. _____________________________
(fill in the step label)

b. Determine which type of proportion the problem is and write down the appropriate proportion model.

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(fill in either the DIRECT or INDIRECT model)

c. Write a proportion problem based on the data in the criteria box and the chosen proportion model.

d. Once the proportion problem is set up, CROSS MULTIPLY to create an equation.

Note 1: Check to see if you can cancel before cross-multiplying.

Note 2: Always start the cross-multiplying process with the “leg” of the cross that contains the unknown variable.
3. a. Print the step label next to the number.  

b. Re-write the equation.  
c. Solve the equation.

4. a. Print the step label next to the number.  

b. To check your answer, plug it into the original proportion (or the simplified version).  
c. Multiply the **FIRST NUMERATOR** and the **SECOND DENOMINATOR**.  
d. Multiply the **FIRST DENOMINATOR** and the **SECOND NUMERATOR**.  
e. If the two products formed in step c and step d above are **EQUAL**, then the answer must be correct.

5. a. Print the step label next to the number.  

b. Write a complete sentence or phrase which details your answer. (Consider that the reader may have no knowledge of the problem or the steps required to solve it.  

**THIS IS NOT THE PLACE TO TAKE SHORTCUTS**
The following problems must be worked out in detail using the FIVE STEPS FOR PROBLEM SOLVING strategy described in the section. If the work is not complete and detailed, NO CREDIT will be awarded.

An annual interest of $551.25 is received on a savings deposit of $10,500. At the same rate, how much annual interest is received on a deposit of $13,090?
The following problems must be worked out in detail using the FIVE STEPS FOR PROBLEM SOLVING strategy described in the section. If the work is not complete and detailed, NO CREDIT will be awarded.

Two sup pumps working at the same rate drain a flooded basement in 5 1/2 hours. How long does it take 3 pumps working at the same rate to drain the basement?
The following problems must be worked out in detail using the FIVE STEPS FOR PROBLEM SOLVING strategy described in the section. If the work is not complete and detailed, NO CREDIT will be awarded.

A solution contains 1/4 ounce acid and 8 1/2 ounces of water. For the same strength solution, how much acid must be mixed with 12 3/4 ounce of water?
The following problems must be worked out *in detail* using the FIVE STEPS FOR PROBLEM SOLVING strategy described in the section. If the work is not complete and detailed, NO CREDIT will be awarded.

If a GEAR has 35 teeth and is turning at 160 RPM, how many teeth does the meshing PINION have if it is turning at 200 RPM?