

Week 7 Algebra 1 Assignment:

Day 1: Chapter 3 test

Day 2: pp. 132-133 #1-41 odd

Day 3: pp. 138-139 #2-20 even, 22-26

Day 4: pp. 141-142 #1-21 odd, 25-30

Day 5: pp. 145-147 #1-25 odd, 33-37

Notes on Assignment:

For the test:

- Simplify expressions that contain negative exponents
- Determine which are constants and which are variables
- Evaluate expressions
- Simplify expressions by clearing parentheses
- Translate phrases and sentences into math expressions or equations.

Pages 132-133:

Work to show:

For all of these problems, first write the equation down, leaving some space so you can add or subtract on both sides if needed. Then decide what operation you need to do in order to “undo” what is being done to the variable. Write it on both sides and finish the problem.

Problems should be done as follows:

$\begin{aligned}x + 4 &= 19 \\x + 4 - 4 &= 19 - 4 \\x &= 15\end{aligned}$	$\begin{aligned}\frac{5x}{5} &= \frac{20}{5} \\1x &= 4 \\x &= 4\end{aligned}$	$\begin{aligned}\left(\frac{3}{1}\right)\frac{n}{3} &= \frac{7}{1}\left(\frac{3}{1}\right) \\1n &= 21 \\n &= 21\end{aligned}$
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#3: You need to subtract 7 on both sides in order to undo the +7. On the right side you get $-3 - 7$. You may want to change this to addition by writing $-3 + -7$.

- #17: If the variable is on the right and you'd like it on the left, you can switch the sides. You then have $y + 27 = 18$.
- #29: You are solving for x , so "undo" what's being done to the x . In this problem, the x is being multiplied by r , so divide both sides by r .
- #33: Since this problem involves a fraction, instead of dividing both sides by 2, multiply both sides by $\frac{1}{2}$.

Pages 138-139:

Work to show:

For all of these problems you are to use the 5-step process that we learned in class. This is not the same as what is in the textbook. The 5 steps should be numbered, and they include the following:

1. Find: (Write down what you are trying to find.)
2. Let statement: (Establish the variable being used. If you have more than one quantity, always start with the one you know the least about.)
3. Equation (Translate the information not yet used into an equation.)
4. Solution (When you finish solving the equation, circle your solution. If you have more than one quantity listed in step 2, write down what they equal as well.)
5. Conclusion (Write a sentence answering what you were told to find.)

- #2: You are trying to find the number of days traveled. Here's a hint: When you see the word "each" used as it is, it often means that if you know how many days they traveled, you would multiply it by 300 to find their total distance traveled. If you let x be the number of days, then your equation must be $300x = 1800$.
- #6: The perimeter of a triangle is found by adding the lengths of the 3 sides together.
- #8: You have 2 amounts: the number of stamps that Kent has and the number that Joan has. Since you don't know anything about the number that Joan has, let x = that amount in step 2. Then write the representation for Kent in step 2. Now the problem says that Kent has 243 stamps, so 243 must equal whatever you wrote for Kent's number of stamps in step 2.
- #12: The boy's delivery of 13 papers is $\frac{1}{7}$ of his route. Use this version of the problem to translate into your equation.
- #14: You only have one number, so you only have one variable.
- #20: You will have 3 things listed in step 2. Let x equal the one you know the *least* about. The other 2 will depend on x .

#22: What set of numbers does it belong to?

#24: Change the subtraction to addition before multiplying through the parentheses. You do not have to do this to work the problem, but may be helpful.

#26: Use n for the number.

Pages 141-142:

Work to show:

For all of these problems, first write the equation down, leaving some space so you can add or subtract on both sides if needed. Then follow the steps for solving equations:

1. Isolate the variable term (i.e. get it alone on one side).
2. Multiply or divide to solve.

*Note: Combine like terms on the same side of the equals sign at any time.

Problems should be done as follows:

$$\begin{aligned}3x - 4 &= -10 \\3x - 4 + 4 &= -10 + 4 \\3x &= -6 \\3x &\quad -6 \\ \hline 3 &\quad 3 \\x &= -2\end{aligned}$$

#1: The variable term is $3x$. To isolate it, you need to get rid of the -10 by adding 10 to both sides. After you have done that, then you can divide both sides by 3 to finish solving the equation.

#5: Combine the like terms first. Change the subtraction into addition if that is helpful to you.

#17-21: These are 5-step word problems. Make sure you number your steps!

#17: If she gets \$13 for every piece she sells, then you will multiply 13 times the number of pieces she sells. In this case, the number she sells is our variable. Add the commission to find her total earnings for the week. This amount must equal \$500.

#19: Notice that the commission is in cents and the other amounts are in dollars. You need to write the dollar amounts in cents so that all measurements are the same. So instead of \$25, write 2500¢. Instead of \$47, write 4700¢.

#21: Be careful with the fractions. You will need to get a common denominator to add or subtract.

Pages 145-147:

Work to show:

Note: For all of these problems, first write the equation down. We have added another step to our list, so follow the new steps for solving equations:

1. Clear any parentheses.
2. Isolate the variable term (i.e. get it alone on one side).
3. Multiply or divide to solve.

*Note: Combine like terms on the same side of the equals sign at any time.

Problems should be done as follows:

$$\begin{aligned}7x + 3(4 - x) &= 4 \\7x + 12 - 3x &= 4 \\4x + 12 &= 4 \\4x + 12 - 12 &= 4 - 12 \\ \frac{4x}{4} &= \frac{-8}{4} \\1x &= -2 \\x &= -2\end{aligned}$$

#3: Multiply through the parentheses with the 2. Our equation then becomes $18x + 6 - 4x = 34$. Now combine the like terms on the left and continue with the solving.

#5: Any time you have () with no number in front, or a variable with no number in front, you can put a 1. For this problem, when you put a 1 in front of those first (), you can multiply through by 1 to clear the parentheses.

#7: Don't lose the negative in front of the 4. Change the subtraction to addition and get $3x + -4(x+5) = -17$. Now put a 1 in front of the x and multiply through by the -4 to get $3x + -4x + -20 = -17$. Combine like terms on the left to get $-1x + -20 = -17$. You need to get rid of a -20 that is being added. To do this, add its opposite of +20 to both sides. Finish the problem by dividing.

#19: Treat a and b as numbers. Clear your () first by multiplying through by a . This gives you $ax + b + ax + ab = b$. Put 1's in front of all of the terms so that you get $1ax + 1b + 1ax + 1ab = 1b$. Combine the two $1ax$ terms on the left. Then get rid of the $1b$ and $1ab$ terms by subtracting both of them on both sides. Then divide to solve.

#21-25: These are 5-step word problems. Make sure you number your steps! All three of these problems will have 2 entries for step 2. Start with what you know the least about.