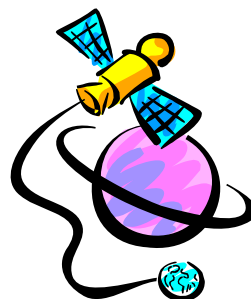


MTH 60 group work

Please work all of these problems on your own paper. Complete solutions will be on my website Friday night.

1. The two congruent sides of an isosceles triangle are each 1.4 times the length of the third side. The perimeter of the triangle is 83.6 inches. How long is each side of the triangle? *Some steps you should take are outlined below.*
 - a. Draw a picture of an isosceles triangle on your paper; two of the sides have equal length.
 - b. Write a definition of the variable; the variable should be the *length* of the shorter side - don't forget to include the unit used to measure the length in your definition.
 - c. Label the short side of your triangle with the variable you chose.
 - d. Determine how long each of the other two sides are in terms of your variable. For example, if you chose to use x as your variable, the length of each of the other two sides would be the algebraic expression that equates to 1.4 times x .
 - e. Label each of the other 2 side of the triangle with the expression that represents their lengths.
 - f. The perimeter of the triangle is the sum of the lengths of the 3 sides of the triangle. Write down this sum and set it equal to 83.6.
 - g. Solve your equation.
 - h. Determine the lengths of the other two sides.
 - i. Check your solution. Do the 3 lengths sum to 83.6 inches? Is the longer length 1.4 times the shorter length?
 - j. Write your conclusion in sentence form; don't forget your units when stating your conclusion
2. Solve each formula for the specified letter.
 - a. Solve $a = b + c + d$ for b .
 - b. Solve $a = bcd$ for b .
 - c. Solve $a = b(c + d)$ for b .
 - d. Solve $a = bc + d$ for b .
 - e. Solve $a = b + cd$ for b .
 - f. Solve $a = \frac{b}{cd}$ for b .
 - g. Solve $a = \frac{bc}{d}$ for b .
 - h. Solve $a = \frac{b}{c} + d$ for b .
3. The Spuntick satellite is on a journey through our solar system. Spuntick cruises at a constant speed of 35,466 mph. The distance from Jupiter to Saturn is about 4.0×10^8 miles. How many *years* did it take Spuntick to fly from Jupiter to Saturn?
Round your solution to the nearest tenth.



4. Find the solution to the equation $5(2x - 8) - 2 = 5(x - 3) + 3$.
5. Find the solution set to $5t - 3(t + 1) = 2(t + 3) - 5$.
6. Find the solution set to the equation $\frac{x}{2} - \frac{x}{4} + 4 = x + 4$.
7. Find the solution to the equation $2(y + 4) = 4y + 5 - 2y + 3$.
8. Find the solution to $100 = 4(w - 6) - (w - 1)$.
9. In a recent election in Florida for a seat in the United States House of Representatives, Corrine Brown received 13,288 more votes than Bill Randall. If the total number of votes was 119,436, find the number of votes for each candidate.
10. A 17-foot piece of rope is cut into two pieces so that one piece is 2 feet longer than twice the shorter piece. If the shorter piece is x feet long, find the lengths of both pieces. To receive full credit for this question, you must write an equation that accurately models the problem and solve that equation. Don't forget to write a sentence conclusion.
11. Find the solution set to $7 + 2(3z - 5) = 8 - 3(2z + 1)$.
12. Find the solution to the equation $\frac{y}{12} + \frac{1}{6} = \frac{y}{2} - \frac{1}{4}$.
13. Find the solution set to the equation $\frac{x - 3}{5} - 1 = \frac{x - 5}{4}$.