1. For each problem set up and solve a proportion. Label ALL numbers!!!!

a. A recipe requires 3 cups of flour to make 27 dinner rolls. How much flour is needed to make 9 rolls?

b. The world-wide sea level has risen 22.75 mm in the past 6.5 years. At this rate, how much higher will the level be 8 years from now?

c. If a woman making $25 an hour gets a 10% raise, how much will she now make?

d. You buy a computer that was marked 24% off. You end up paying $800 for the computer and there was no tax. How much was the computer originally?

e. Doug, Mike and Eli go to Ichiban for dinner. They can't spend more than $58 (because that's all they have). They want to leave a 20% tip and they have to pay 6% sales tax on the food. Figure out the maximum amount they can spend without going over (otherwise they would go to jail).
2. Mr. Dutelle takes used drum sets, fixes them up and then marks the price up by 70%. His staff gets a 20% commission on the markup for selling the drum sets. Find the missing values in the table.

<table>
<thead>
<tr>
<th>Buying Price</th>
<th>Markup (70% of buying price)</th>
<th>Selling Price</th>
<th>Commission (20% of markup)</th>
<th>Profit (money the shop makes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$70</td>
<td>$204</td>
<td></td>
<td>$8.40</td>
<td>$84</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. E-Kat must correctly answer at least 80% of the questions on an exam about cats in order to get her cat license. She has already correctly answered 26 questions and incorrectly answered 4 questions. How many of the 15 questions remaining must E-Kat answer in order to get her next license?

A. At least 10
B. At least 11
C. At least 12
D. At least 13

Justify your answer to #3 below...

4. Garrett hiked 14 miles in 4 hours. Elena hiked 21 miles in 6 hours. Do these rates demonstrate a proportional relationship? Why or why not?
5. A bottle of detergent that will wash 32 loads of laundry will cost $4.80. A bottle that will wash 50 loads costs $7.00. Which is the better deal? Prove your answer.

6. Look at the figures below.

![Square Diagram](15 cm x 15 cm)

![Rectangle Diagram](9 cm x 12 cm)

Do the corresponding sides of the figure form a proportional relationship? Why or why not?

7. Jeb paid $35 to rent a kayak for $\frac{3}{4}$ hours.

a. Write an equation to show the relationship between $h$, time in hours, and $d$, cost in dollars.

b. Graph the equation to the write and label the unit cost for renting a kayak.
8. Roscoe’s family has dinner at a restaurant. The total cost is $103.80. This includes 5% tax and 15% tip on the pre-tax amount. How much was the bill before tax and tip?
   · Show your work.

Answer

9. Two construction companies are building 1,100 foot tall skyscrapers. Company A has finished 550 feet of construction in 5\(\frac{1}{2}\) months. Company B has finished 385 feet of construction in 3\(\frac{1}{2}\) months. If both companies continue to build at the same rate, which company will reach the top first?

Answer

· Justify your answer.

10. In cooking school, 4 students made secret sauce. One of the students made a mistake in the recipe. Who was it?

Answer

· Justify your answer.

<table>
<thead>
<tr>
<th>Student</th>
<th>Mayonnaise</th>
<th>Mustard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hal</td>
<td>4 ounces</td>
<td>2.5 ounces</td>
</tr>
<tr>
<td>Moncef</td>
<td>7.5 ounces</td>
<td>5 ounces</td>
</tr>
<tr>
<td>Sheena</td>
<td>2(\frac{2}{5}) ounces</td>
<td>1(\frac{1}{2}) ounces</td>
</tr>
<tr>
<td>Claire</td>
<td>12 ounces</td>
<td>7.5 ounces</td>
</tr>
</tbody>
</table>