

### Changing a Fraction to a Percent (2 strategies)

- Convert your fraction to a decimal. Then, look at your number out to the hundredths place to find your percent (since percents are always out of 100)

◦ Example:

$$\frac{2}{5} = \frac{2 \times 2}{5 \times 2} = \frac{4}{10} \text{ or } \frac{40}{100} = 0.\underline{40} = 40\%$$

← hundredths

$$\frac{3}{7} = 3 \div 7 \approx 0.\underline{4286} \approx 43\%$$

↑ hundredths

- Make a proportion - set your fraction equal to another fraction with a denominator of 100

- Multiply your cross products and then divide by your original fractions denominator.

◦ Example:

Cross products  
↓

Original denominator →

$$\frac{2}{5} = \frac{?}{100}$$

$$? = 2 \times 100 = 200 \div 5 = 40$$

$$\frac{40}{100} = 40\%$$

$$\frac{3}{7} = \frac{?}{100}$$

$$? = 3 \times 100 = 300 \div 7 \approx 42.857$$

$$\frac{42.857}{100} \approx 43\%$$

# Investigation 4 Cheat Sheet

## Percents

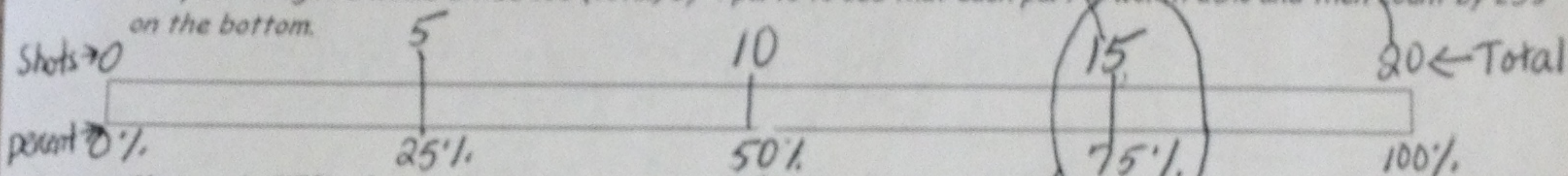
- a part to whole comparison using 100 as the whole.
- Means "out of"
- Another way to write a fraction with a denominator of 100
- Example: 8% is 8 out of 100,  $\frac{8}{100}$ , or 8 per 100.

## Use a percent bar to solve problems involving percents. Here are some tips:

- The bottom of the bar is used for percents. The beginning being 0% and the end being 100%.
- The top of the bar is used for the numbers. The beginning being 0 and the end being your total.
- Separate the bar into equal sized pieces that are compatible with your problem.
  - Label each piece as a percent on the bottom of the bar. For example if I separated my bar into 4 pieces I would do  $100 \div 4$  to get how much each piece would be. Each piece would be 25% so I would count by 25% when I labeled my parts.
  - Label each piece as a number on the top of the bar. For example if I separated my bar into 4 pieces I would do my total  $\div 4$  to get how much each piece would be. I would count by whatever answer I got when I labeled my parts.

**Example #1:** Emily made 15 out of 20 free-throw shots. What percent of the free-throws she attempted did she make in?

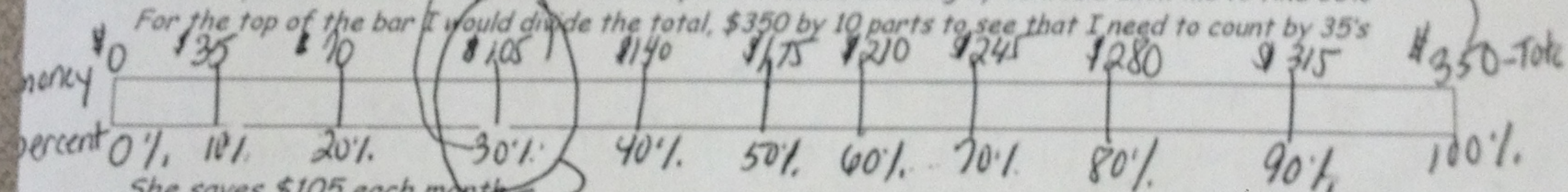
For this problem I would separate it into 4 parts because 4 is a factor of 20 and 100. Since 20 is the total, I divide that by 4 parts to see that one part is 5 shots. I would count by 5's to fill in the top part of my bar. For the percentages I would divide 100 (total) by 4 parts to see that each part is worth 25% and then count by 25's on the bottom.



She made 75% of the shots she attempted.

**Example #2:** Marilyn saves 30% of the money she earns each month. She earns \$350 each month. How much does she save?

For this problem I would separate it into 10 parts because counting by 10 would allow me to find 30%. For the top of the bar I would divide the total, \$350 by 10 parts to see that I need to count by 35's



She saves \$105 each month.

**Example #3:** At the Natural History Museum, 40% of the visitors are children. There are 36 children at the museum. How many visitors altogether are at the museum?

For this problem I would separate it into 10 parts because counting by 10 would allow me to find 40%. Then, I would put 36 over 40% because the problem said that there are 36 children and that 40% are children. Since 40% is 36 children, I see that 4 parts equal 36. If I divide 36 by 4 I find that each part is worth 9 children. So count by nines to find what 100% or the total would be.

