

### 2.8 Percent Problems - Finding the Whole (6.NS.4)

#### Vocabulary

Proportion - an equation that shows two ratios are equal.

Percent Proportion - one ratio compares a part to the whole. The other ratio is the equivalent percent written as a fraction with a denominator of 100.

## Vocabulary Start-Up



A **proportion** is an equation that shows that two ratios are equivalent. In a **percent proportion**, one ratio compares a part to the whole. The other ratio is the equivalent percent written as a fraction with a denominator of 100.

### How do you compare part and whole?

fraction	ratio	percent
$\frac{2}{5}$ $\frac{\text{part}}{\text{whole}}$ What do you call the part? <u>numerator</u> The whole? <u>denominator</u>	Using the information in the first ratio, fill in the others. $\frac{2}{5}$ <u>2 to 5</u> <u>2:5</u>	$\frac{2}{5} = \frac{40}{100}$ (Handwritten: $\times 20$ above and below the fraction) <u>40</u> % of 5 = 2

## Use the Percent Proportion

The diagram uses a percent proportion to show that 75% of 32 is 24.

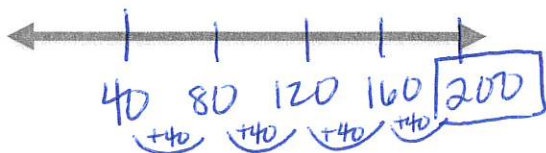
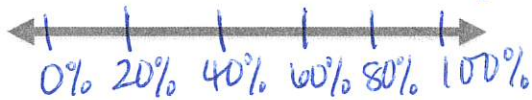
$$\left. \begin{array}{l} \text{part} \rightarrow \frac{24}{32} \\ \text{whole} \rightarrow \frac{75}{100} \end{array} \right\} \text{percent}$$

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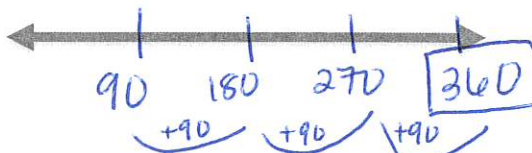
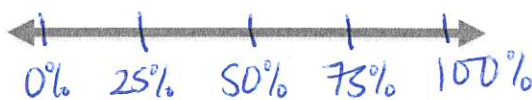
Guided Practice

Use double number lines to find the whole.

1.) 40 is 20% of what number? **200**



2.) 90 is 25% of what number? **360**



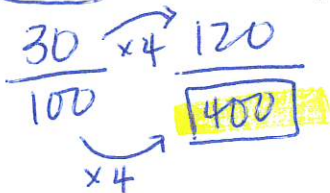
Write a percent proportion and solve each problem.

Option 1: Scale (if possible)

Option 2: Cross-Products (Cross Multiply and Divide)

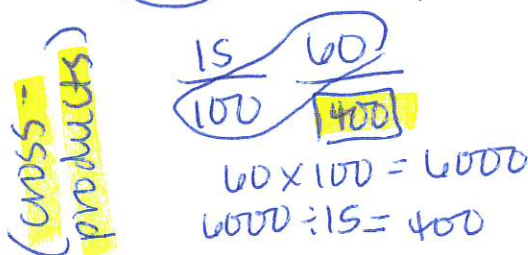
} you choose!

3.) 120 is 30% of what problem.

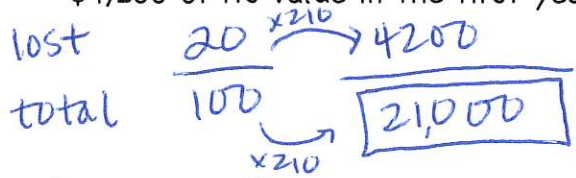


(scale)

4.) 60 is 15% of what problem.

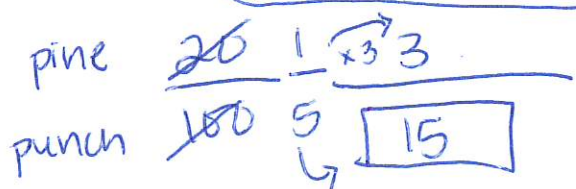


5a.) In the first year of ownership, a new car can lose 20% of its value. If a car lost \$4,200 of its value in the first year, how much did the car originally cost? — need whole



**\$21,000**

5b.) It takes 20% pineapple juice to make a punch. If you have 3 cups of pineapple juice, how many total cups of punch can you make? — need whole



**15 cups**

6.) Building on the essential question - How can you use proportions to solve percent problems?

\* find equivalent ratios/fractions by scaling or using cross-products

Rate Yourself - Are you ready to move on? Yes OR No

don't use is/w/ word pr. of