

Name: \_\_\_\_\_

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## Exploration: Ratio & Proportion (2)

### Step 1: Launch the *Comparing Number Lines: Ratios & Proportions* applet.

**Comparing Number Lines – Ratios & Proportions**

To adjust a slider in smaller increments, click on the slider circle and use the left and right arrow keys. All values may be rounded.

- Part out of 100 = 50
- Whole = 100
- Part<sub>1</sub> = 10
- Whole<sub>1</sub> = 40
- Part<sub>2</sub> = 10
- Whole<sub>2</sub> = 20

- Visual representations
- Proportions (see below)
- Show when equivalent or approximately equivalent
- Hash marks

- The first line (green) represents the whole. 50% of the whole 100% is shown by the dotted line.
- The second line (blue) represents the ratio 10 out of 40.
- The third line (orange) represents the ratio 10 of 20.

### Step 2: Set up the following proportion: $\frac{50\%}{100\%} = \frac{20}{40}$

- First, **uncheck** the bottom part and whole. (Next to the orange number line.)
- Next, notice **Whole<sub>1</sub>** is **40**. (If it is not, drag the blue dot below the **Whole<sub>1</sub>** until it is **40**.)
- Then, adjust the **Part<sub>1</sub>** to be **20** by clicking on the **blue dot** and dragging it to the right.

**Comparing Number Lines – Ratios & Proportions**

To adjust a slider in smaller increments, click on the slider circle and use the left and right arrow keys. All values may be rounded.

- Part out of 100 = 50
- Whole = 100
- Part<sub>1</sub> = 20
- Whole<sub>1</sub> = 40
- Part<sub>2</sub>
- Whole<sub>2</sub>

- Visual representations
- Proportions (see below)
- Show when equivalent or approximately equivalent
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- Check the **Proportions (see below)** checkbox
- Check the  Ratio<sub>1</sub> and Percent checkbox
- Notice the ratios are equivalent.

Ratio<sub>1</sub> and Percent

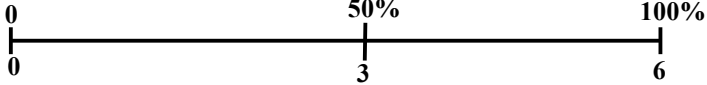
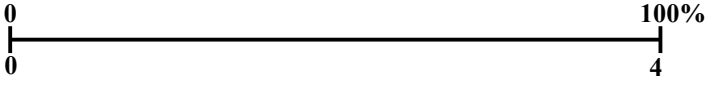
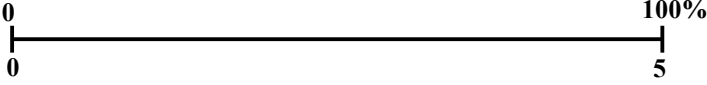
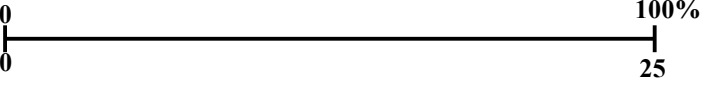
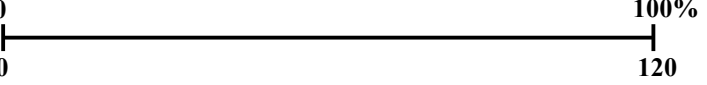
$$\frac{20}{40} = \frac{50}{100}$$

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**Part I.** You are provided a ratio. Find the corresponding percent.

Use the double number line to represent your solution. Check your prediction using the applet.

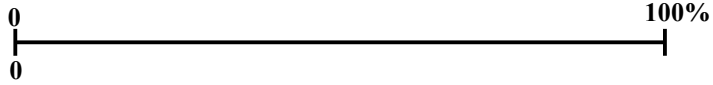
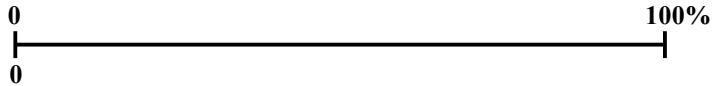
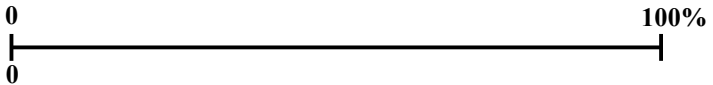
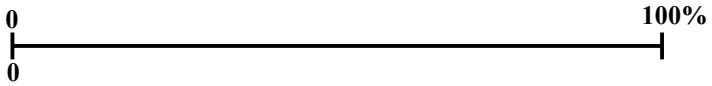
#	Ratio	Solution/Explanation
1.	$\frac{3}{6}$ Make 2 equal intervals.	 <p><i>3 is 50% of 6</i> <i>You can see that 3 is half way to 6 which is the same as 50% of 100%</i></p>
2.	$\frac{3}{4}$ Make 4 equal intervals.	
3.	$\frac{2}{5}$ Make 5 equal intervals.	
4.	$\frac{15}{25}$ Make 5 equal intervals.	
5.	$\frac{30}{120}$ Make 10 equal intervals.	



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**Part II.** Use 2, 4, or 10 intervals to help estimate the percent.

#	Ratio	Solution/Explanation
6.	$\frac{7}{10}$	
7.	$\frac{6}{8}$	
8.	$\frac{3}{5}$	
9.	$\frac{18}{25}$	
10.	$\frac{28}{140}$	