

Unit 2 Lesson 22: Benchmark Percentages

1 What Percentage Is Shaded? (Warm up)

Student Task Statement

What percentage of each diagram is shaded?

A



B



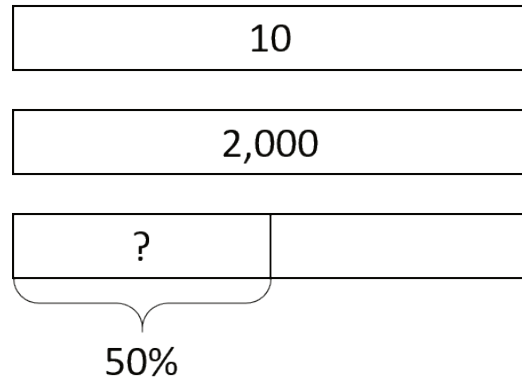
C



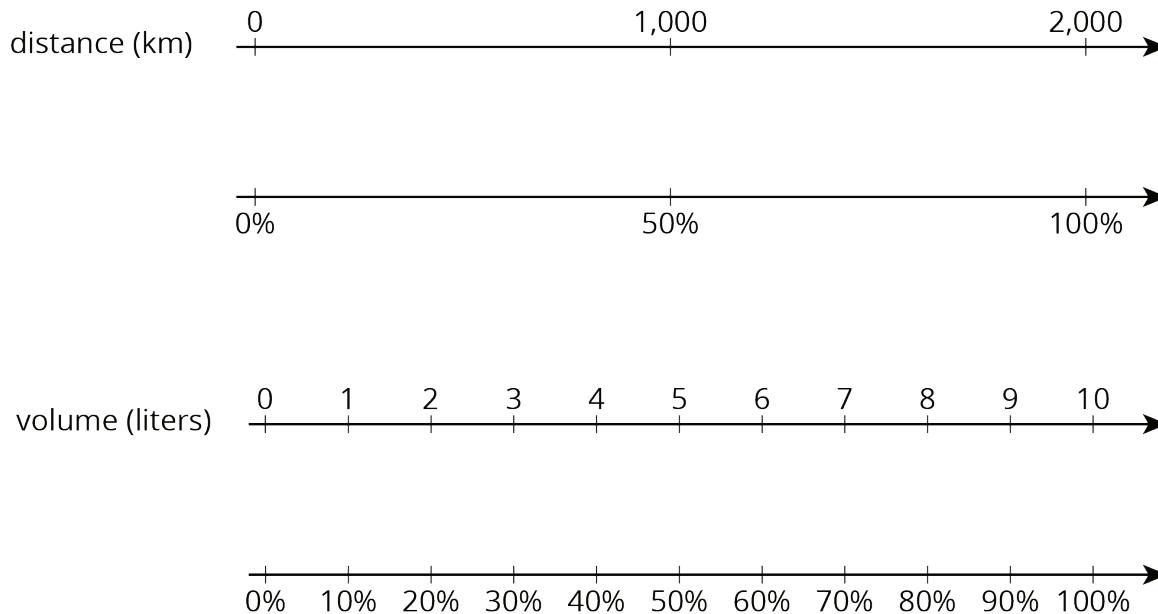
2 Liters, Meters, and Hours

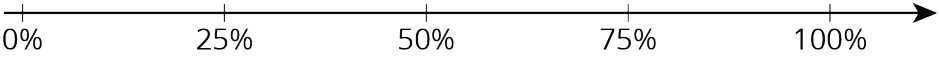
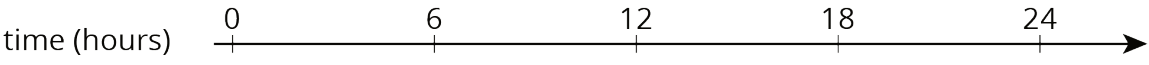
Student Task Statement

1.
 - a. How much is 50% of 10 liters of milk?
 - b. How far is 50% of a 2,000-kilometer trip?
 - c. How long is 50% of a 24-hour day?
 - d. How can you find 50% of any number?
2.
 - a. How far is 10% of a 2,000-kilometer trip?
 - b. How much is 10% of 10 liters of milk?
 - c. How long is 10% of a 24-hour day?
 - d. How can you find 10% of any number?
3.
 - a. How long is 75% of a 24-hour day?
 - b. How far is 75% of a 2,000-kilometer trip?
 - c. How much is 75% of 10 liters of milk?
 - d. How can you find 75% of any number?



Activity Synthesis



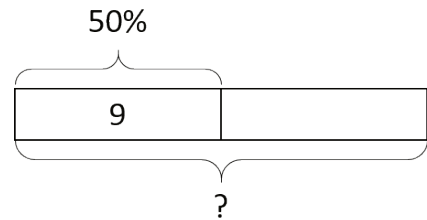


3 Nine is . . .

Student Task Statement

Explain how you can calculate each value mentally.

1. 9 is 50% of what number?
2. 9 is 25% of what number?
3. 9 is 10% of what number?
4. 9 is 75% of what number?
5. 9 is 150% of what number?



4 Matching the Percentage (Optional)

Student Task Statement

Match the percentage that describes the relationship between each pair of numbers. One percentage will be left over. Be prepared to explain your reasoning.

- | | |
|--------------------------------|--------|
| 1. 7 is what percentage of 14? | • 4% |
| 2. 5 is what percentage of 20? | • 10% |
| 3. 3 is what percentage of 30? | • 25% |
| 4. 6 is what percentage of 8? | • 50% |
| 5. 20 is what percentage of 5? | • 75% |
| | • 400% |

Images for Activity Synthesis

| | value | percentage |
|---------------------|----------------|------------|
| | x | 100 |
| $\cdot \frac{1}{4}$ | $\frac{1}{4}x$ | 25 |
| $\cdot \frac{1}{2}$ | $\frac{1}{2}x$ | 50 |
| $\cdot \frac{3}{4}$ | $\frac{3}{4}x$ | 75 |

The diagram illustrates the relationship between the value and percentage columns of the table. On the left side, green arrows point from the value column to the percentage column, with multipliers $\cdot \frac{1}{4}$, $\cdot \frac{1}{2}$, and $\cdot \frac{3}{4}$ indicating the operations used to find the percentages. On the right side, green arrows point from the percentage column back to the value column, with multipliers $\cdot \frac{1}{4}$, $\cdot \frac{1}{2}$, and $\cdot \frac{3}{4}$ indicating the operations used to find the values.