

Applications

- Mountview Middle School conducted the same type of fundraiser as Thurgood Marshall Middle School. The Mountview sixth-grade thermometer for Day 2 is shown at the right.
 - Write three statements that the principal could make when reporting the results of the progress made by the sixth-graders.
 - What are two claims that the sixth-graders could make if they collected \$50 on the third day?
 - Draw and shade a thermometer for Day 3.
- What fraction strips could you make if you started with a fourths strip?
 - If your teacher gave you an eighths strip like the one you made in Problem 1.2, which of the fraction strips you folded for Problem 1.2 would have more than one mark that lines up with the marks on the eighths strip?

Goal
\$300



Day 2

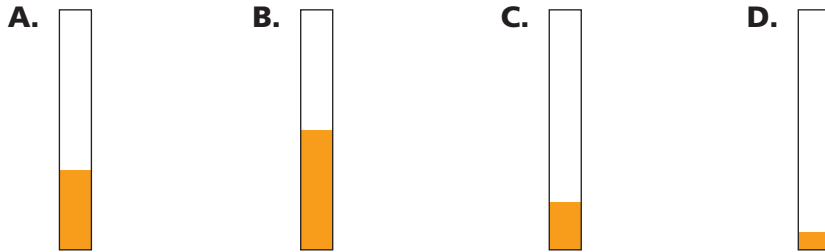
For Exercises 3–6, fold fraction strips or use some other method to estimate the fraction of the fundraising thermometer that is shaded.

- Goal
\$400
- Goal
\$400
- Goal
\$400
- Goal
\$400

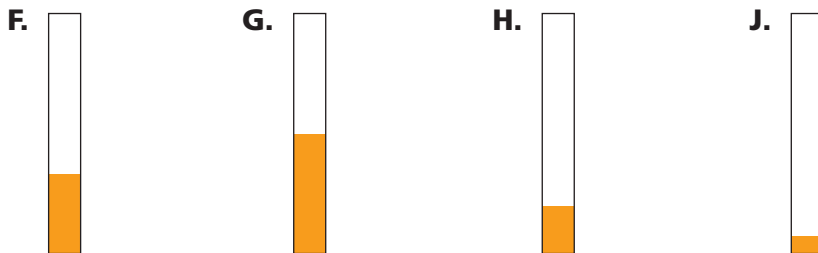
For Exercises 7–11, use this illustration of a drink dispenser. The gauge on the side of the dispenser shows how much of the liquid remains in the dispenser. The dispenser holds 120 cups.



7. a. About what fraction of the dispenser is filled with liquid?
 b. About how many cups of liquid are in the dispenser?
 c. About what fraction of the dispenser is empty?
 d. About how many more cups of liquid would it take to fill the dispenser?
8. For parts (a)–(c), sketch the gauge and tell whether each dispenser is *almost empty*, *about half full*, or *almost full*.
- a. five sixths ($\frac{5}{6}$) of a full dispenser
 b. three twelfths ($\frac{3}{12}$) of a full dispenser
 c. five eighths ($\frac{5}{8}$) of a full dispenser
9. **Multiple Choice** Which gauge shows about 37 out of 120 cups remaining?



10. **Multiple Choice** Which gauge shows about 10 out of 120 cups remaining?

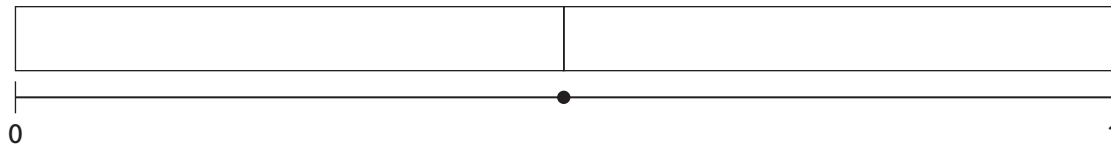


11. In Exercises 9 and 10, about what fraction is shaded in each gauge you chose?

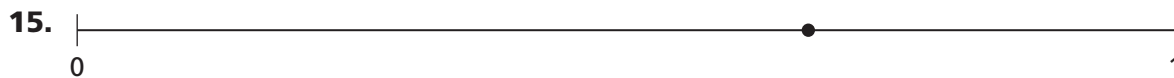
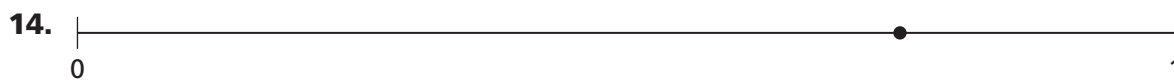
- 12.** Suppose you were trying to measure progress on a fundraising thermometer with your fifths strip, but the progress was between $\frac{3}{5}$ and $\frac{4}{5}$. What could you do to find a more exact answer?

For Exercises 13–15, use the information below.

You can also use fraction strips to name points on a number line. The point on this number line is at $\frac{1}{2}$.



Copy each number line. Use fraction strips or some other method to name the point with a fraction.



- 16.** Samuel is getting a snack for himself and his little brother, Adam. Samuel takes half of one snack bar for himself and half of another snack bar for Adam. Adam complains that Samuel got more. Samuel says that he got half and Adam got half. What might be the problem?

- 17.** In Problem 1.4, the eighth-grade thermometer is smaller than the sixth- and seventh-grade thermometers. Redraw the eighth-grade thermometer so that it is the same size as the sixth- and seventh-grade thermometers, but still shows the correct fraction for Day 10.

- 18.** If a class collects \$155 toward a fundraising goal of \$775, what fraction represents the class's progress toward its goal?



For: Help with Exercise 17
Web Code: ame-2117

19. Bryce and Rachel are collecting food for the local food bank. Bryce's goal is to collect 32 items. Rachel's goal is to collect 24 items. If Rachel and Bryce each meet their goal, what fraction of Bryce's goal does Rachel collect?



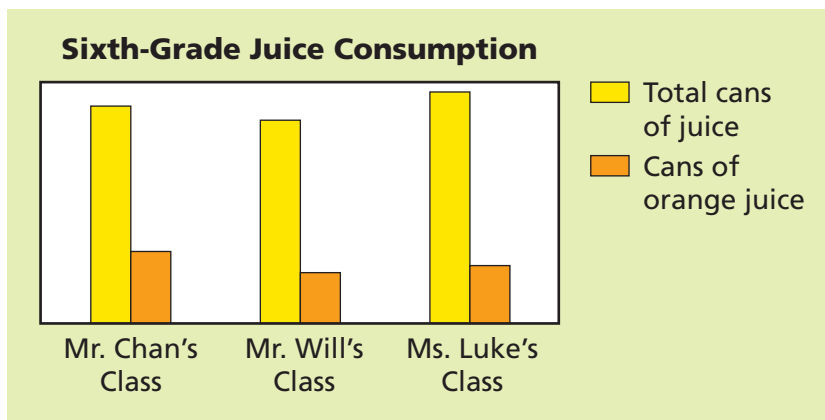
Connections

20. Is 450 divisible by 5, 9, and 10? Explain.
21. Explain your answer to each question.
- Is 12 a divisor of 48?
 - Is 4 a divisor of 150?
 - Is 3 a divisor of 51?
22. **Multiple Choice** Choose the number that is not a factor of 300.
- A. 5 B. 6 C. 8 D. 20
23. **Multiple Choice** Choose the answer that shows all of the factors of 48.
- F. 2, 4, 8, 24, and 48 G. 1, 2, 3, 4, 5, and 6
H. 48, 96, 144 J. 1, 2, 3, 4, 6, 8, 12, 16, 24, and 48
24. a. Miguel says that numbers that are divisible by 2 can easily be separated into halves of the number. Do you agree? Why or why not?
b. Manny says that if Miguel is correct, then any numbers that are divisible by 3 can easily be separated into thirds. Do you agree? Why or why not?
c. Lupe says that if any number is divisible by n , it can be easily separated into n ths. Do you agree with her? Explain.
25. a. If you had a fraction strip folded into twelfths, what fractional lengths could you measure with the strip?
b. How is your answer in part (a) related to the factors of 12?
26. a. If you had a fraction strip folded into tenths, what fractional lengths could you measure with the strip?
b. How is your answer in part (a) related to the factors of 10?

- 27.** Ricky found a beetle that has a body one fourth ($\frac{1}{4}$) the length of the fraction strips used in Problem 1.2.
- How many beetle bodies, placed end to end, would have a total length equal to the length of a fraction strip?
 - How many beetle bodies, placed end to end, would have a total length equal to three fraction strips?
 - Ricky drew 13 paper beetle bodies, end to end, each the same length as the one he found. How many fraction strips long is Ricky's line of beetle bodies?



For Exercises 28–30, use the bar graph below, which shows the number of cans of juice three sixth-grade classes drank.

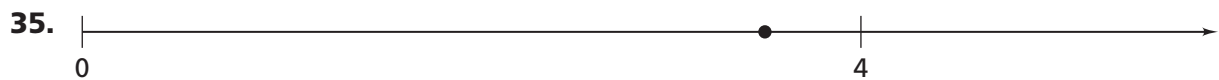
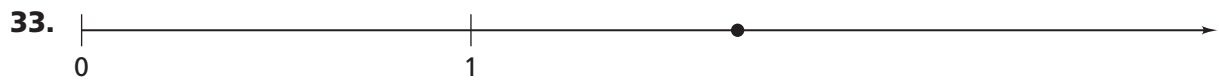
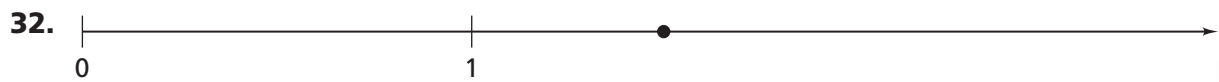


- In each class, what fraction of the cans were orange juice?
- In which class would you say orange juice was most popular?
- Students in Mr. Chan's class drank a total of ten cans of orange juice. About how many cans of orange juice did the students in each of the other two classes drink?
 - About how many total cans of juice did each of the three classes drink?

Extensions

- 31.** Dario made three pizzas, which he sliced into quarters. After considering how many people he would be sharing with, he thought to himself, “Each person can have half.”
- Is it possible that there was only one other person to share with? Explain.
 - Is it possible that there were 5 other people to share with? Explain.
 - Is it possible that there were 11 other people to share with?

For Exercises 32–35, copy the number line. Use fraction strips or some other method to name the point with a fraction.



- 36.** Write a numerator for each fraction to make the fraction close to, but not equal to, $\frac{1}{2}$. Then write a numerator to make each fraction close to, but greater than, 1.
- $\frac{\square}{22}$
 - $\frac{\square}{43}$
 - $\frac{\square}{17}$
- 37.** Write a denominator to make each fraction close to, but not equal to, $\frac{1}{2}$. Then write a denominator to make each fraction close to, but greater than, 1.
- $\frac{22}{\square}$
 - $\frac{43}{\square}$
 - $\frac{17}{\square}$