Applications Connections Extensions ACE

Applications

For Exercises 1–9, determine whether the number is closest to 0, $\frac{1}{2}$, or 1. Explain your reasoning.

1. $\frac{10}{9}$ **2.** $\frac{9}{16}$ **3.** $\frac{2}{15}$

4. $\frac{500}{1000}$ **5.** $\frac{5}{6}$ **6.** $\frac{48}{100}$

7. 0.67 **8.** 0.26 **9.** 0.0009999

For Exercises 10–15, determine whether the sum of the two Getting Close game cards is closest to 0, 1, 2, or 3. Explain.

10. $\frac{7}{8}$ and $\frac{4}{9}$ **11.** $1\frac{4}{10}$ and 0.375 **12.** $\frac{2}{5}$ and $\frac{7}{10}$

13. $1\frac{3}{4}$ and $\frac{1}{8}$ **14.** $1\frac{1}{3}$ and 1.3 **15.** 0.25 and $\frac{1}{8}$

For Exercises 16–18, you are playing a game called Getting Even Closer. In this game, you have to estimate sums to the nearest $\frac{1}{2}$, or 0.5. Decide if the sum of the two game cards turned up is closest to 0, $\frac{1}{2}$, or 1. Explain.

16. $\frac{3}{5}$ and $\frac{1}{10}$ **17.** $\frac{1}{4}$ and $\frac{1}{10}$ **18.** $\frac{1}{9}$ and $\frac{1}{8}$

19. Four students were asked the following question: "Can you find two fractions with a sum greater than $\frac{3}{4}$?" Explain whether each student's answer below is correct.

a. $\frac{1}{8} + \frac{2}{4}$ **b.** $\frac{3}{6} + \frac{2}{4}$ **c.** $\frac{5}{12} + \frac{5}{6}$ **d.** $\frac{5}{10} + \frac{3}{8}$

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For Exercises 20–25, find two fractions with a sum that is between the two given numbers.

20. 0 and $\frac{1}{2}$ **21.** $\frac{1}{2}$ and 1 **22.** 1 and $1\frac{1}{2}$

23. $1\frac{1}{2}$ and 2 **24.** 2 and $2\frac{1}{2}$ **25.** $2\frac{1}{2}$ and 3

26. Many sewing patterns have a $\frac{5}{8}$-inch border for sewing the seam. Is a $\frac{5}{8}$-inch border closest to 0, $\frac{1}{2}$, or 1 inch? Explain.

27. Last season Farmer Sam picked $1\frac{3}{4}$ bushels of tomatoes from his kitchen garden and $14\frac{1}{3}$ bushels from his canning garden. About how many total bushels of tomatoes did he harvest?

28. Suppose you mix $\frac{5}{8}$ cup of wheat flour with $1\frac{3}{4}$ cups of white flour. Do you have enough for a recipe that calls for $2\frac{1}{2}$ cups of flour?

29. Soo needs 2 yards of molding to put around the bottom of a stand. He has two pieces of molding: one is $\frac{7}{8}$ yard long and the other is $\frac{8}{7}$ yard long. Estimate whether he has enough molding. Explain.

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30. Julio is at the grocery store. He has \$10.00. Here is a list of the items he would like to buy. Use mental computation and estimation to answer parts (a)–(c).

Milk	\$2.47
Eggs	\$1.09
Cheese	\$1.95
Bread	\$0.68
Honey	\$1.19
Cereal	\$3.25
Avocado	\$0.50
Chipotles	\$1.29

a. Can Julio buy all the items with the money he has? Explain.

b. If he has only \$5.00, what can he buy? Give two possibilities.

c. What different items can Julio buy to come as close as possible to spending \$5.00?

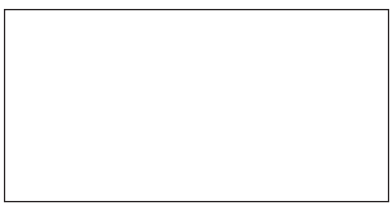
Connections

31. The rectangle shown represents $\frac{3}{4}$ of a whole.

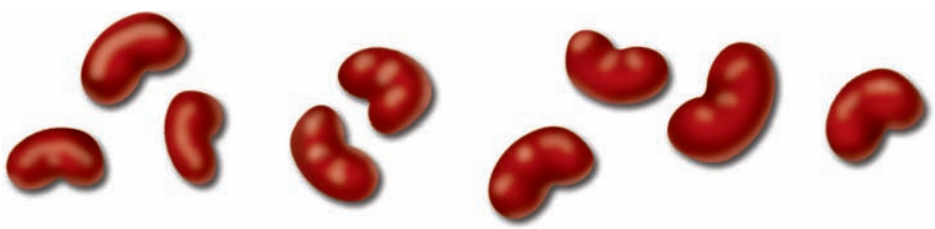
a. Draw a rectangle representing the whole.

b. Draw a rectangle representing $\frac{5}{4}$ of the whole.

32. The rectangle shown represents 150% of a whole. Draw 100% of the same whole.



33. The beans shown represent $\frac{3}{5}$ of the total beans on the kitchen counter. How many total beans are there on the counter?



34. The following fractions occur so often in our lives that it is useful to quickly recall their decimal and percent equivalents.

$$\frac{1}{2} \quad \frac{1}{3} \quad \frac{1}{4} \quad \frac{2}{3} \quad \frac{3}{4} \quad \frac{1}{6} \quad \frac{1}{5} \quad \frac{1}{8}$$

a. For each of these important fractions, give the decimal and percent equivalents.

b. Draw a number line. On your number line, mark the point that corresponds to each fraction shown above. Label each point with its fraction, decimal, and percent equivalent.

35. Multiple Choice Choose the set of decimals that is ordered from least to greatest.

A. 5.603 5.63 5.096 5.67 5.599

B. 5.63 5.67 5.096 5.599 5.603

C. 5.096 5.63 5.67 5.603 5.599

D. 5.096 5.599 5.603 5.63 5.67

36. In which of the following groups of fractions can *all* the fractions be renamed as a whole number of hundredths? Explain your reasoning for each.

a. $\frac{3}{2}, \frac{3}{4}, \frac{3}{5}$

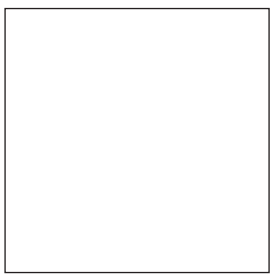
b. $\frac{7}{10}, \frac{7}{11}, \frac{7}{12}$

c. $\frac{2}{5}, \frac{2}{6}, \frac{2}{8}$

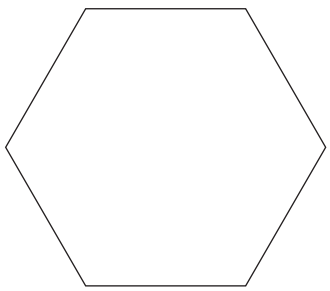
d. $\frac{11}{5}, \frac{11}{10}, \frac{11}{20}$

For Exercises 37–40, copy the figure onto your paper. Then, divide the figure into fourths. Shade $\frac{1}{4}$ of the figure.

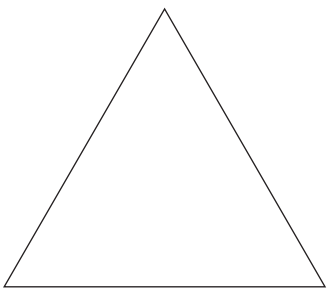
37.



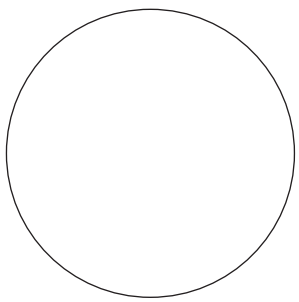
38.



39.

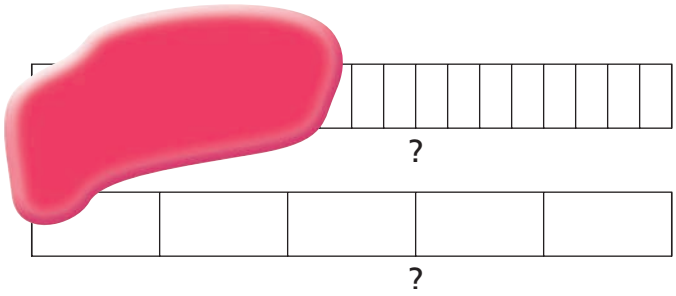


40.

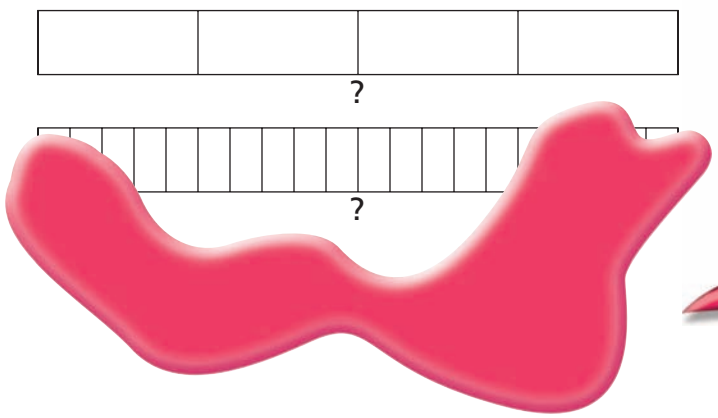


In Exercises 41 and 42, craft paint has spilled on the page, covering part of the fraction strips. Use what is showing to reason about each pair of strips. Find the equivalent fractions indicated by the question marks.

41.

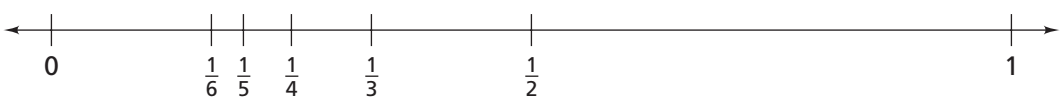


42.



Extensions

For Exercises 43–46, name a fraction in the given interval.



43. between $\frac{1}{3}$ and $\frac{1}{2}$

44. between $\frac{1}{4}$ and $\frac{1}{3}$

45. between $\frac{1}{5}$ and $\frac{1}{4}$

46. between $\frac{1}{6}$ and $\frac{1}{5}$

47. In Exercises 43–46, is it possible to find another fraction in each interval? Why or why not?