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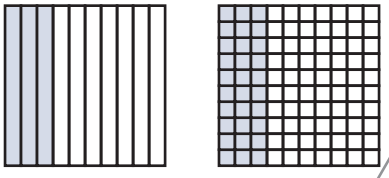
LESSON 1

Decimal Fractions

A fraction with a denominator of 10 can be **expressed,** or written, as an equivalent fraction with a denominator of 100.

You can use a model to find an equivalent fraction.

Express $\frac{3}{10}$ as an equivalent fraction.



$\frac{3}{10} = \frac{30}{100}$

You can add two fractions with the unlike denominators 10 and 100.

$$\frac{2}{10} + \frac{6}{100} = \square$$

First, write $\frac{2}{10}$ as an equivalent fraction. Multiply $\frac{2}{10}$ by $\frac{10}{10}$.

$$\frac{2}{10} \times \frac{10}{10} = \frac{20}{100}$$

$$\frac{2}{10} = \frac{20}{100}$$

Now add the two fractions.

$$\frac{20}{100} + \frac{6}{100} = \frac{26}{100}$$

In a relay race, Linda swam $\frac{31}{100}$ kilometer and Shawn swam $\frac{4}{10}$ kilometer. What is the total distance they swam in the race?

$$\frac{4}{10} + \frac{31}{100} = \frac{40}{100} + \frac{31}{100} = \frac{71}{100}$$

They swam $\frac{71}{100}$ kilometer.

Equivalent fractions name the same value in different terms.

To add fractions, the denominators should be the same.

To find an equivalent fraction, multiply the numerator and denominator by the same number. A fraction with the same number in the numerator and denominator is equal to one.

$$\frac{10}{10} = 1$$

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GUIDED PRACTICE

Read and solve each problem.

1 Which is an equivalent fraction to $\frac{6}{10}$?

A $\frac{60}{10}$ **C** $\frac{60}{100}$

B $\frac{10}{6}$ **D** $\frac{6}{100}$

Find an equivalent fraction with a denominator of 100.

2 Which is an equivalent fraction to $\frac{40}{100}$?

A $\frac{4}{1}$ **C** $\frac{40}{10}$

B $\frac{10}{40}$ **D** $\frac{4}{10}$

Think how you can change 100 to 10. Do the same thing to the numerator of the fraction.

3 Find the sum of $\frac{4}{10} + \frac{59}{100}$.

A $\frac{10}{99}$ **C** $\frac{63}{100}$

B $\frac{63}{10}$ **D** $\frac{99}{100}$

First, change one fraction so its denominator is the same as the other fraction's.

4 Lily finds the sum of $\frac{12}{100}$ and $\frac{8}{10}$. Explain the steps she takes.

_____

_____

_____

To add the fractions, the denominators must be the same.

5 Explain why $\frac{3}{10}$ and $\frac{30}{100}$ have unlike denominators but are equivalent fractions.

_____

_____

How do you know the two fractions are equivalent?

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TEST YOURSELF

Read and solve each problem.

1 Which fraction is equivalent to $\frac{7}{10}$?

A $\frac{1}{7}$ **C** $\frac{7}{100}$

B $\frac{70}{100}$ **D** $\frac{10}{700}$

2 Barney washes $\frac{5}{10}$ of the windows on a building. Which is an equivalent fraction to $\frac{5}{10}$?

A $\frac{50}{100}$ **C** $\frac{5}{100}$

B $\frac{500}{100}$ **D** $\frac{1}{5}$

3 Which fraction is equivalent to $\frac{10}{100}$?

A $\frac{10}{1}$ **C** $\frac{100}{10}$

B $\frac{1}{10}$ **D** $\frac{1}{100}$

4 What is $\frac{3}{10} + \frac{15}{100}$?

A $\frac{18}{10}$ **C** $\frac{18}{100}$

B $\frac{45}{100}$ **D** $\frac{45}{10}$

5 Add:

$$\frac{7}{100} + \frac{2}{10} = \square$$

A $\frac{9}{10}$ **C** $\frac{27}{100}$

B $\frac{9}{100}$ **D** $\frac{72}{100}$

6 Find the sum of $\frac{3}{100} + \frac{5}{10}$.

A $\frac{35}{10}$ **C** $\frac{35}{100}$

B $\frac{8}{10}$ **D** $\frac{53}{100}$

7 Find the equivalent fraction for $\frac{9}{10}$ with the denominator 100. Explain your answer.

_____

_____

8 The library is $\frac{25}{100}$ kilometer from Nick's school and the track field is $\frac{3}{10}$ kilometer directly beyond the library. What is the total distance from the school to the track field? Explain how you found the total distance.

_____

_____

_____

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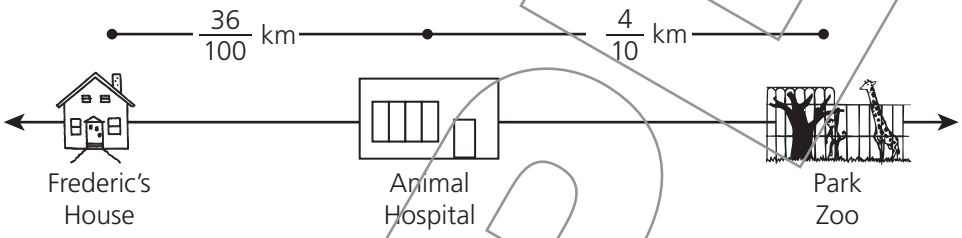
9 Add $\frac{1}{10}$ and $\frac{1}{100}$. Show your work.

Answer _____

10 One Saturday, Frederic volunteered at the animal hospital in the morning and the park zoo in the afternoon.



Part A Use the diagram. What is the total distance from Frederic's home to the park zoo?

Answer _____

Part B Explain how you found the total distance.

_____

_____

11 Dara, Eva, and Sanjay are running for student council. Dara received $\frac{32}{100}$ of the votes. Eva received $\frac{43}{100}$ of the votes. Sanjay received $\frac{2}{10}$ of the votes.

Part A What part of the votes did they receive together?

Answer _____

Part B Explain how you found the part of the votes.

_____

_____

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