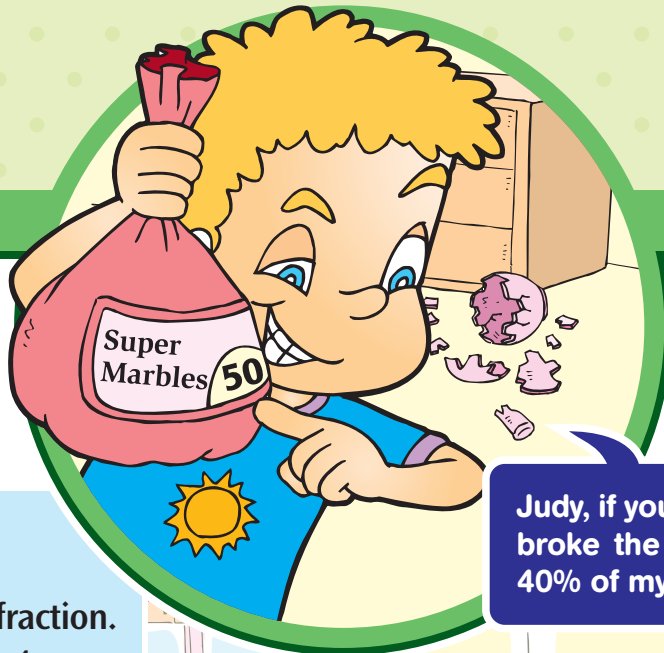


Fractions, Decimals, and Percents

Number Sense and Numeration

14



Judy, if you tell Mom that you broke the vase, I'll give you 40% of my 50 marbles.

Finding 40% of 50:

1st Write 40% as a fraction.

$$40\% = \frac{40}{100} = \frac{4}{10}$$

2nd Find the equivalent fraction that has "50" as the denominator.

$$\frac{4}{10} \overset{\times 5}{=} \frac{20}{50}$$

$$40\% \text{ of } 50 = \underline{20}$$



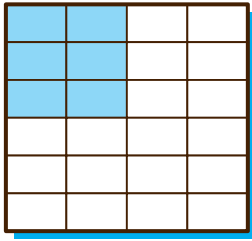
I won't tell a lie just because you'll give me 20 marbles. You'd better tell Mom the truth right now.

In this unit, students will:

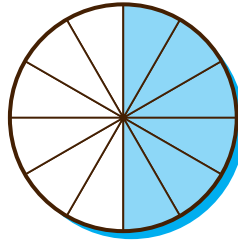
- use different ways to find equivalent fractions.
- write fractions in a simpler form and in simplest form.
- write mixed numbers as improper fractions and vice versa.
- compare fractions.
- add or subtract fractions.
- write a fraction, a decimal, and a percent to describe parts of a whole.
- find the percent of a number.

A. Write 2 equivalent fractions to show the coloured part of each diagram.

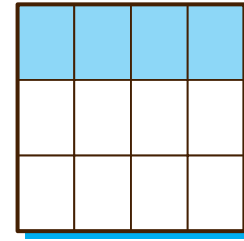
1.



2.



3.



B. Fill in the blanks with the correct numbers. Then find the equivalent fraction for each fraction.

1.

You can multiply or divide the numerator and denominator by the same number to find an equivalent fraction.

By multiplication:

$$\frac{15}{20} = \frac{\boxed{}}{60}$$

$\xrightarrow{\times 3}$
 $\xrightarrow{\times 3}$

By division:

$$\frac{15}{20} = \frac{\boxed{}}{4}$$

$\xrightarrow{\div 5}$
 $\xrightarrow{\div 5}$



So, $\frac{15}{20}$, $\frac{\boxed{}}{60}$, and $\frac{\boxed{}}{4}$ are equivalent fractions.

2. $\frac{8}{16} = \frac{}{2}$

3. $\frac{3}{4} = \frac{}{12}$

4. $\frac{8}{10} = \frac{4}{}$

5. $\frac{4}{9} = \frac{20}{}$

6. $\frac{16}{18} = \frac{}{36}$

7. $\frac{3}{5} = \frac{9}{}$

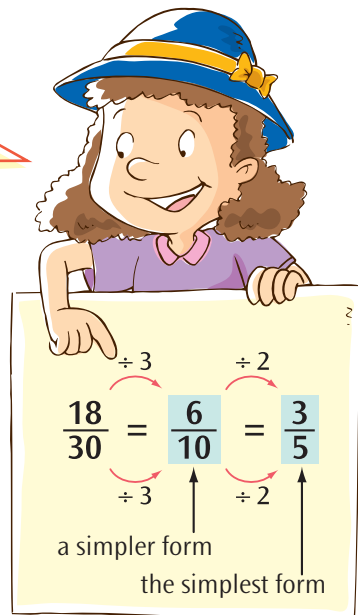
8. $\frac{7}{14} = \frac{1}{}$

9. $\frac{9}{12} = \frac{3}{}$

10. $\frac{4}{15} = \frac{8}{}$

C. Write each fraction in a simpler form. Then write in simplest form.

$\frac{6}{10}$ is a simpler form of $\frac{18}{30}$. $\frac{3}{5}$ is the simplest form of $\frac{18}{30}$ because 1 is the only common factor of the numerator “3” and the denominator “5”.



- | | |
|---|--|
| 1. $\frac{36}{40} = \frac{\quad}{20} = \frac{\quad}{10}$ | 2. $\frac{24}{48} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$ |
| 3. $\frac{60}{100} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$ | 4. $\frac{40}{72} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$ |
| 5. $\frac{30}{50} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$ | 6. $\frac{42}{56} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$ |

D. Write each mixed number as an improper fraction or each improper fraction as a mixed number.

1. Mixed Number \rightarrow Improper Fraction

- the whole number x the denominator
- add the numerator

a. $2\frac{1}{5} = \frac{\quad}{5}$ ← $2 \times 5 = 10$
 $10 + 1 = 11$

b. $3\frac{1}{4} = \frac{\quad}{\quad}$

c. $2\frac{3}{7} = \frac{\quad}{\quad}$

d. $4\frac{2}{3} = \frac{\quad}{\quad}$

2. Improper Fraction \rightarrow Mixed Number

- divide the numerator by the denominator
- quotient – whole number
- remainder – numerator
- divisor – denominator

a. $\frac{7}{3} = \frac{\quad}{3}$

$$\begin{array}{r} 2 \text{ R } 1 \\ 3 \overline{) 7} \\ \underline{6} \\ 1 \end{array}$$

b. $\frac{11}{4} = \frac{\quad}{\quad}$

c. $\frac{15}{2} = \frac{\quad}{\quad}$

d. $\frac{10}{8} = \frac{\quad}{\quad}$

E. Circle the greater fractions.

1. $1\frac{4}{5}$ $\frac{12}{5}$

2. $2\frac{1}{3}$ $\frac{15}{4}$

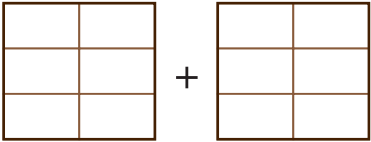
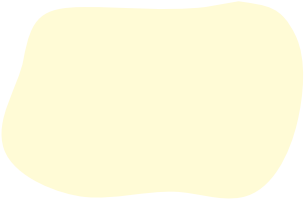
3. $1\frac{3}{7}$ $\frac{11}{3}$

4. $\frac{14}{3}$ $4\frac{5}{9}$

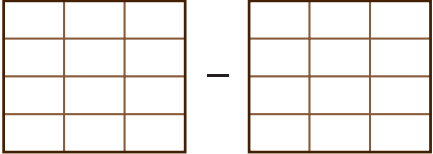

5. $4\frac{1}{5}$ $\frac{31}{10}$

6. $\frac{16}{9}$ $2\frac{5}{18}$

F. Colour the diagram to match each fraction. Add or subtract. Then write the answer in simplest form and draw diagrams to match the answer.

1.  = 
 $\frac{4}{6} + \frac{5}{6} = \underline{\hspace{2cm}}$

When we add or subtract fractions, we just add or subtract the numerator; the denominators remain the same. Then write the answer in simplest form.

2.  = 
 $\frac{7}{12} - \frac{5}{12} = \underline{\hspace{2cm}}$



G. Add or subtract. Then write the answers in simplest form.

1. $\frac{9}{10} + \frac{7}{10} = \underline{\hspace{2cm}}$

2. $\frac{5}{8} - \frac{1}{8} = \underline{\hspace{2cm}}$

3. $\frac{10}{12} - \frac{1}{12} = \underline{\hspace{2cm}}$

4. $\frac{7}{15} + \frac{2}{15} = \underline{\hspace{2cm}}$

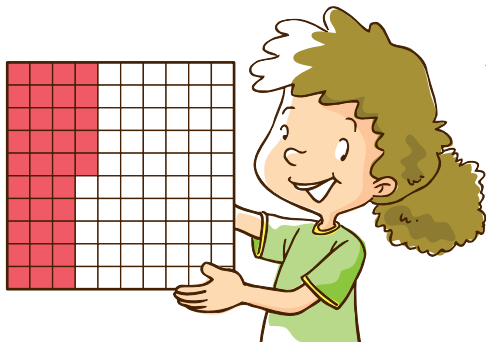
5. $\frac{5}{6} + \frac{2}{6} = \underline{\hspace{2cm}}$

6. $\frac{9}{12} - \frac{4}{12} = \underline{\hspace{2cm}}$

7. $\frac{8}{10} - \frac{3}{10} = \underline{\hspace{2cm}}$

8. $\frac{9}{14} - \frac{5}{14} = \underline{\hspace{2cm}}$

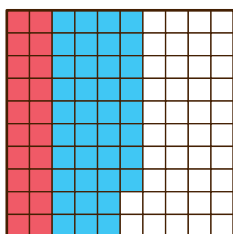
H. Read what Emily says. Write a fraction, a decimal, and a percent to describe the coloured part of each grid.



Percent means “per hundred” or “out of 100”. We can read 35% as 35 percent.

- 35 out of 100 squares are red.
- $\frac{35}{100}$, 0.35, or 35% of the grid is red.

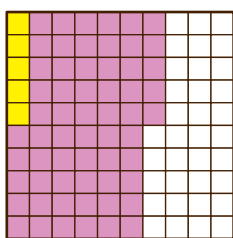
1.



Red

Blue

2.



Yellow

Purple

I. Write in 2 other ways to describe parts of a whole.

1. 30% _____

2. 0.38 _____

3. $\frac{52}{100}$ _____

4. $\frac{4}{5}$ _____

5. 0.75 _____

6. 45% _____

7. $\frac{16}{25}$ _____

8. 0.9 _____

- J. Read what Wayne says. Help him fill in the missing numbers. Then find each amount.

There are two ways to find the percent of a number: by using equivalent fractions or by multiplication.



1. _____ **40% of 50** _____

By using equivalent fractions:

$$40\% = \frac{40}{100} = \frac{\square}{10}$$

$$\frac{4}{10} = \frac{\square}{50}$$

$\xrightarrow{\times 5}$
 $\xleftarrow{\times 5}$

So, 40% of 50 is _____.

By multiplication:

$$40\% = \frac{40}{100} = \frac{\square}{10}$$

$$\frac{1}{10} \text{ of } 50 = \frac{50}{10} = \square$$

(one tenth of 50)

$$\frac{4}{10} \text{ of } 50 = 4 \times \square = \square$$

(four tenths of 50)

2. 25% of 80 = _____
3. 80% of 200 = _____
4. 30% of 150 = _____
5. 75% of 48 = _____

Bonus



The regular price of a doll is \$24. If its sale price is 80% of its regular price, what is the sale price?

Checklist

Are you able to...

- | | |
|--|--|
| <input type="checkbox"/> use different ways to find equivalent fractions?
If not, go back to parts A and B. | <input type="checkbox"/> add or subtract fractions?
If not, go back to parts F and G. |
| <input type="checkbox"/> write fractions in a simpler form and in simplest form?
If not, go back to part C. | <input type="checkbox"/> write a fraction, a decimal, and a percent to describe parts of a whole?
If not, go back to parts H and I. |
| <input type="checkbox"/> write mixed numbers as improper fractions and vice versa?
If not, go back to part D. | <input type="checkbox"/> find the percent of a number?
If not, go back to part J. |
| <input type="checkbox"/> compare fractions?
If not, go back to part E. | |