

7th Grade  
Jan 14, 2021

Today we will:

-review percents  
with Reteach  
Lessons 1-3 Packet



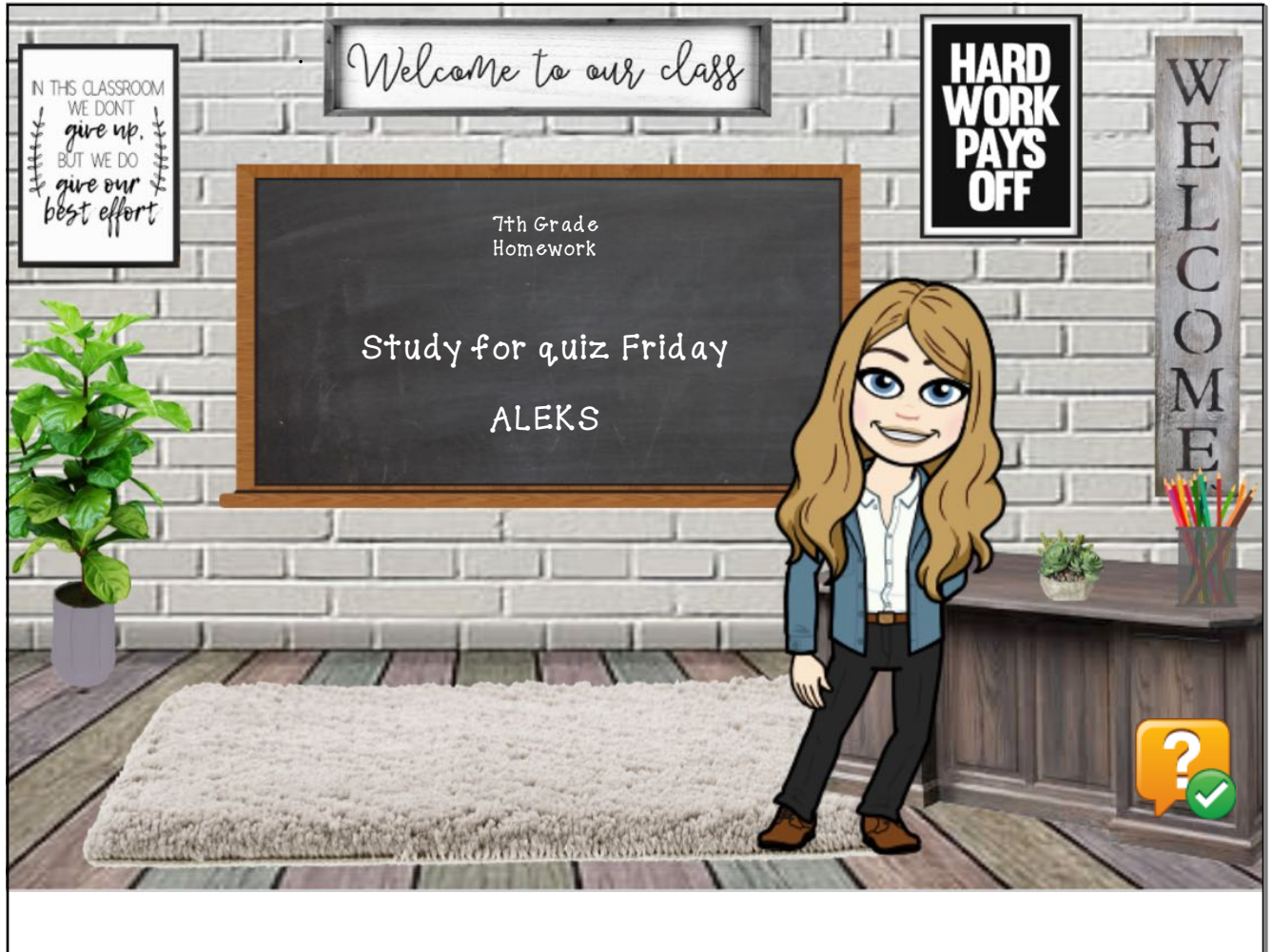
HOMWORK:

Study for quiz on  
Friday (Lessons 1-3)

ALEKS assignment:  
60 min and 5 topics  
due Monday by  
11:59pm







## Lesson 1 Reteach

### Using the Percent Proportion

In a **percent proportion**, one ratio compares *part* of a quantity to the *whole* quantity. The other ratio is the equivalent percent, written as a fraction, with a denominator of 100.

#### Example 1: Find each percent.

##### a. Twelve is what percent of 16?

$$\frac{a}{b} = \frac{p}{100} \rightarrow \frac{12}{16} = \frac{p}{100}$$

Replace the variables.

$$12 \cdot 100 = p \cdot 16$$

Find the cross products.

$$1200 = 16p$$

Multiply.

$$75 = p$$

Divide.

So, twelve is 75% of 16.

##### b. What percent of 8 is 7?

$$\frac{a}{b} = \frac{p}{100} \rightarrow \frac{7}{8} = \frac{p}{100}$$

$$p \cdot 8 = 100 \cdot 7$$

$$700 = 8p$$

$$87.5 = p$$

So, 87.5% of 8 is 7.

#### Example 2: Find the part or the whole.

##### a. What number is 1.4% of 15?

$$\frac{a}{b} = \frac{p}{100} \rightarrow \frac{a}{15} = \frac{1.4}{100}$$

Replace the variables.

$$a \cdot 100 = 15 \cdot 1.4$$

Find the cross products.

$$100a = 21$$

Multiply.

$$a = 0.21$$

Divide.

So, 0.21 is 1.4% of 15.

##### b. 225 is 36% of what number?

$$\frac{a}{b} = \frac{p}{100} \rightarrow \frac{225}{b} = \frac{36}{100}$$

$$225 \cdot 100 = 36 \cdot b$$

$$22,500 = 36b$$

$$625 = b$$

So, 225 is 36% of 625.

#### Exercises

Use the percent proportion to solve each problem.

1. What is 16% of 36?

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100}$$

$$\frac{36}{100} = \frac{16}{100}$$

$$36 \cdot 16 \div 100 =$$

2. 43.2 is what percent of 48?

$$\frac{43.2}{48} = \frac{p}{100}$$

3. 4.5 is 90% of what number?

1. What number is 35% of 250?

- A.  162.5
  - B.  87.5
  - C.  112.25
  - D.  130.75
- 

2. Seventeen is what percent of sixty-eight?

- A.  25
  - B.  40
  - C.  30
  - D.  32
- 

3. Thirty percent of a number is 39. Find the number.

- A.  76.9
  - B.  117
  - C.  130
  - D.  11.7
- 

4. Find 43.8% of 75.

- A.  3285
  - B.  32.85
  - C.  3.285
  - D.  328.5
- 

5. The manager of a music store examined his CD sales by category for the past few months. The results are shown in the table. If he plans to order 250 new CDs, how many of them should be dance?

CD Sales	
Type of Music	Percent of Sales
Pop	31
Dance	11
Rock	22
Rap	24
Country	12

- A.  28
  - B.  40
  - C.  11
  - D.  23
-

## Lesson 2 Reteach

### Find Percent of a Number Mentally

When working with common percents like 10%, 25%, 40%, and 50%, it may be helpful to use the fraction form of the percent.

Percent-Fraction Equivalents				
$25\% = \frac{1}{4}$	$10\% = \frac{1}{10}$	$20\% = \frac{1}{5}$	$12\frac{1}{2}\% = \frac{1}{8}$	$16\frac{2}{3}\% = \frac{1}{6}$
$50\% = \frac{1}{2}$	$30\% = \frac{3}{10}$	$40\% = \frac{2}{5}$	$37\frac{1}{2}\% = \frac{3}{8}$	$33\frac{1}{3}\% = \frac{1}{3}$
$75\% = \frac{3}{4}$	$70\% = \frac{7}{10}$	$60\% = \frac{3}{5}$	$62\frac{1}{2}\% = \frac{5}{8}$	$66\frac{2}{3}\% = \frac{2}{3}$
$100\% = 1$	$90\% = \frac{9}{10}$	$80\% = \frac{4}{5}$	$87\frac{1}{2}\% = \frac{7}{8}$	$83\frac{1}{3}\% = \frac{5}{6}$

**Example 1: Find 20% of 35 mentally.**

$$20\% \text{ of } 35 = \frac{1}{5} \text{ of } 35 \quad \text{Think: } 20\% = \frac{1}{5}.$$

$$= 7 \quad \text{Think: } \frac{1}{5} \text{ of } 35 \text{ is } 7. \text{ So, } 20\% \text{ of } 35 \text{ is } 7.$$

When an exact answer is not needed, estimate by rounding and using mental math to compute the answer.

**Example 2: Estimate.**

a. 23% of 84

23% is about 25% or  $\frac{1}{4}$ .

$\frac{1}{4}$  of 84 is 21.

So, 23% of 84 is about 21.

b.  $\frac{1}{2}\%$  of 490

$\frac{1}{2}\% = \frac{1}{2} \cdot 1\%$

490 is almost 500.

So,  $\frac{1}{2}\%$  of 490 is about  $\frac{1}{2} \times 5$  or 2.5.

### Exercises

Find the percent of each number mentally.

1. 60% of 25

$$\begin{array}{l} 10\% = 2.5 \\ \times 6 \\ \hline 60\% = \times 6 \end{array}$$

2. 125% of 4

3. 15% of 110

Estimate.

4. 19% of 20

5. 150% of 200

6. 52% of 129

1. What number is approximately 40% of 685?

- A.  420
  - B.  350
  - C.  280
  - D.  320
- 

2. Find 50% of 80 mentally.

- A.  4
  - B.  40
  - C.  160
  - D.  20
- 

3. Find 25% of 20 mentally.

- A.  5
  - B.  10
  - C.  80
  - D.  4
- 

4. Find 60% of 30 mentally.

- A.  12
  - B.  18
  - C.  50
  - D.  24
- 

5. Estimate 73% of 16.

- A.  14
  - B.  10
  - C.  12
  - D.  8
-

## Lesson 3 Reteach

### Using the Percent Equation

A **percent equation** is an equivalent form of the percent proportion. In a percent equation, the percent is written as a decimal.

**Example:** Solve each problem using a percent equation.

a. Find 22% of 95.

$$n = 0.22(95)$$

$$n = 20.9$$

So, 22% of 95 is 20.9.

b. 15 is what percent of 75?

$$15 = n(75)$$

$$0.2 = n$$

So, 15 is 20% of 75.

c. 90 is 20% of what number?

$$90 = 0.2n$$

$$450 = n$$

So, 90 is 20% of 450.

### Exercises

Solve each problem using a percent equation.

1. Find 76% of 25.

2. 15.4 is what percent of 55?

3. 36 is 9% of what number?



1. Find 27% of 42.

- A.  0.1134
  - B.  1.134
  - C.  113.4
  - D.  11.34
- 

2. Find 68% of 79.

- A.  5.372
  - B.  0.5372
  - C.  53.72
  - D.  537.2
- 

3. 16 is what percent of 192?

- A.  1200%
  - B.   $8\frac{1}{3}\%$
  - C.  12%
  - D.   $0.08\bar{3}\%$
- 

4. 22 is 20% of what number?

- A.  110
  - B.  440
  - C.  4.4
  - D.  1.1
- 

5. Find 16% of 230.

- A.  3.68
  - B.  368
  - C.  36.8
  - D.  3680
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