Estimating with Percents

MAIN IDEA

• Estimate the percent of a number.

EXAMPLES **Estimate the Percent of a Number**

1 **Estimate 49% of 302.**

49% is close to [ ] or [ ].

Round 302 to [ ].

[ ] of [ ] is [ ]. $\frac{1}{2}$ or *half* means to divide by 2.

So, 49% of 302 is about [ ].

2 **Estimate 80% of 1,605.**

80% is [ ].

Round 1,605 to [ ] since it is divisible by 10.

$\frac{1}{10}$ of 1,600 is [ ]. $\frac{1}{10}$ or 1 *tenth* means divide by 10.

So, $\frac{8}{10}$ of 1,600 is 8 × 160 or [ ].

Thus, 80% of 1,605 is about [ ].

KEY CONCEPTS

Percent-Fraction Equivalents

$20\% = \frac{1}{5}$	$66\frac{2}{3}\% = \frac{2}{3}$
$25\% = \frac{1}{4}$	$70\% = \frac{7}{10}$
$30\% = \frac{3}{10}$	$75\% = \frac{3}{4}$
$33\frac{1}{3}\% = \frac{1}{3}$	$80\% = \frac{4}{5}$
$40\% = \frac{2}{5}$	$90\% = \frac{9}{10}$
$50\% = \frac{1}{2}$	$100\% = 1$
$60\% = \frac{3}{5}$	

Check Your Progress **Estimate each percent.**

a. 26% of 122

b. 40% of 1,207

EXAMPLE

1 **MONEY** A CD that originally cost $11.90 is on sale for 30% off. If you have $7, would you have enough money to buy the CD?

To determine whether you have enough money to buy the CD, you need to estimate 70% of [ ].

METHOD 1 Use a proportion.

70% ≈ 75% or [ ] and $11.90 ≈ [ ]

$\frac{3}{4} = \frac{x}{12}$ Write the proportion.

$\overset{\times 3}{\overset{\frown}{\frac{3}{4} = \frac{x}{12}}}$ Since 4 × 3 = 12, multiply 3 by 3.
$\underset{\times 3}{}$

$x =$ [ ]

METHOD 2 Use mental math.

70% = [ ] and $11.90 ≈ [ ]

$\frac{7}{10}$ of 12 is 8.4 or [ ].

Since [ ] is [ ] more than $7, you would not have enough money.

Check Your Progress **MONEY** A poster that originally cost $14.90 is on sale for 40% off. If you have $10, would you have enough to buy the poster?

HOMEWORK ASSIGNMENT

Page(s):

Exercises:

EXAMPLE

3 TEST EXAMPLE Claire surveyed her classmates about their favorite vacation city in the United States. Predict the number of students out of 234 who would prefer New York City.

Favorite City	Percent of Students
Los Angeles	23%
New York City	26%
Miami	33%
Boston	18%

A 20   **C** 110

B 60   **D** 240

Read the Item

You need to estimate the number of students out of 234 who would prefer New York City. 26% of the students chose New York City.

Solve the Item

26% is about 25% or ☐ . Round 234 to ☐ .

$\frac{1}{4}$ of 240 is ☐ .

So, about ☐ would prefer New York City.

The answer is ☐ .

Check Your Progress

MULTIPLE CHOICE
Monica surveyed her basketball team about their favorite type of restaurant. Predict the number of students out of 318 who would prefer an Italian restaurant.

Type of Restaurant	Percent of Students
Fast Food	8
Italian	12
Asian	33
Mexican	23
Steakhouse	24

F 32   **H** 120

G 50   **J** 200