

Study Guide and Intervention

Estimating with Percents

The table below shows some commonly used percents and their fraction equivalents.

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

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

EXAMPLES Estimate each percent.

1 20% of 58

20% is $\frac{1}{5}$.

Round 58 to 60 since it is divisible by 5.

$$\frac{1}{5} \times 60 = \frac{1}{\underset{1}{5}} \times \frac{\overset{12}{60}}{1} = 12$$

So, 20% of 58 is about 12.

2 76% of 25.

76% is close to 75% or $\frac{3}{4}$.

Round 25 to 24 since it is divisible by 4.

$$\frac{3}{4} \times 24 = \frac{3}{\underset{1}{4}} \times \frac{\overset{6}{24}}{1} = 18$$

So, 76% of 25 is about 18.

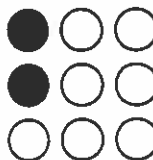
EXAMPLE 3 Estimate the percent of the figure that is shaded.

2 out of 9 circles are shaded.

$\frac{2}{9}$ is about $\frac{3}{9}$ or $\frac{1}{3}$

$$\frac{1}{3} = 33\frac{1}{3}\%$$

So, about $33\frac{1}{3}\%$ of the figure is shaded.



EXERCISES

Estimate each percent.

1. 49% of 8

2. 62% of 20

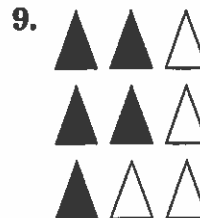
3. 40% of 51

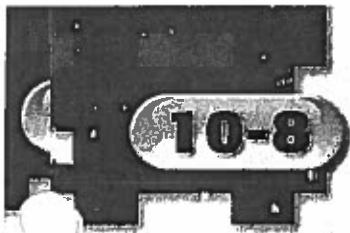
4. 24% of 27

5. 81% of 32

6. 19% of 46

Estimate the percent that is shaded in each figure.



**Practice: Word Problems*****Estimating with Percents***

<p>1. SCHOOL At Westside High School, 24% of the 225 sixth grade students walk to school. About how many of the sixth grade students walk to school?</p>	<p>2. BASKETBALL In the 2002 regular season the WNBA Cleveland Rockers won 31.25% of their games. They had 32 games in their regular season. About how many games did they win?</p>
<p>3. SALES TAX The sales tax rate in Lacon is 9%. About how much tax would you pay on an item that costs \$61?</p>	<p>4. SPORTS The concession stand at a football game served 178 customers. Of those, about 52% bought a hot dog. About how many customers bought a hot dog?</p>
<p>5. READING Max has completed 39% of his reading assignment. If there are 303 pages in the assignment, about how many pages has Max read?</p>	<p>6. SHOPPING A store is having a 20% sale. That means the customer pays 80% of the regular price. About how much would you pay for an item that regularly sells for \$44.99?</p>
<p>7. SLEEP A recent study shows that people spend about 31% of their time asleep. About how much time will a person spend asleep during an average 78 year lifetime?</p>	<p>8. BIOLOGY The human body is 72% water, on average. About how much water will be in a person that weighs 138 pounds?</p>