

Lesson 6-6

Example 1 Find Percent of a Number Mentally Find the percent of each number mentally.

a. 50% of 24

$$50\% \text{ of } 24 = \frac{1}{2} \text{ of } 24 \quad \text{Think: } 50\% = \frac{1}{2}.$$

$$= 12 \quad \text{Think: } \frac{1}{2} \text{ of } 24 \text{ is } 12.$$

So, 50% of 24 is 12.

b. $33\frac{1}{3}\%$ of 30

$$33\frac{1}{3}\% \text{ of } 30 = \frac{1}{3} \text{ of } 30 \quad \text{Think: } 33\frac{1}{3}\% = \frac{1}{3}.$$

$$= 10 \quad \text{Think: } \frac{1}{3} \text{ of } 30 \text{ is } 10.$$

So, $33\frac{1}{3}\%$ of 30 is 10.

c. 20% of 35

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

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

So, 20% of 35 is 7.

Example 2 Estimate Percents

a. Estimate 25% of 81.

25% is equal to $\frac{1}{4}$.

81 is about 80.

$\frac{1}{4}$ of 80 is 20.

So, 25% of 81 is about 20.

b. Estimate 52% of 144.

52% is about 50% or $\frac{1}{2}$.

$\frac{1}{2}$ of 144 is 72.

So, 52% of 144 is about 72.

c. Estimate $\frac{1}{8}\%$ of 3198.

$$\frac{1}{8}\% = \frac{1}{8} \times 1\%. \quad 3198 \text{ is about } 3200.$$

1% of 3200 is 32.

$$\text{So, } \frac{1}{8}\% \text{ of } 3198 \text{ is about } \frac{1}{8} \times 32 \text{ or } 4.$$

d. Estimate 138% of 93.

138% means about 140 for every 100 or about 14 for every 10. 93 has about 9 tens.

$$14 \times 9 = 126$$

So, 138% of 93 is about 126.

Example 3 Use Estimation to Solve a Problem

READING The principal of an elementary school estimates that 15% of all students entering kindergarten already know how to read. If the incoming kindergarten class has 122 students, estimate how many will already know how to read.

122 is about 120.

$$15\% = 10\% + 5\%$$

10% of 120 is 12.

Move the decimal point 1 place to the left.

5% of 120 is 6.

5% is half of 10%.

So, 15% is about $12 + 6$ or 18 students.

A reasonable number of students would be 18.