

# 9-8 Percent and Estimation (Pages 462–466)

When an exact answer is not needed, you can estimate percentages.

<b>Estimating Percents</b>	<p>Method 1: With the fraction method, use a fraction that is close to the percent. For example, 24% is about 25% or <math>\frac{1}{4}</math>.</p> <p>Method 2: With the 1% method, find 1% of the number. Round the result, if necessary, and then multiply to find the percentage.</p> <p>Method 3: Use the meaning of percent to estimate.</p>
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## EXAMPLES

**A** Estimate 40% of 183 using the 1% method.

*1% of 183 is 1.83 or about 2.  
So 40% of 183 is about  $40 \times 2$  or 80.*

**B** Estimate 60% of 537 using the meaning of percent.

*60% means 60 for every 100 or 6 for every 10. 537 has 5 hundreds and about 4 tens ( $37 \approx 40$ ).  
 $(60 \times 5) + (6 \times 4) = 300 + 24$  or 324.*

### Try These Together

1. What fraction could you use to estimate 34% of a number?

*HINT:  $\frac{1}{3}$  is about 33%.*

2. Estimate a percent for 29 out of 40.

*HINT: 29 out of 40 is close to 30 out of 40.*

## PRACTICE

**Write the fraction, mixed number, or whole number you could use to estimate.**

- |         |        |         |
|---------|--------|---------|
| 3. 110% | 4. 22% | 5. 41%  |
| 6. 8.5% | 7. 49% | 8. 430% |

**Estimate.**

- |                 |                |               |               |
|-----------------|----------------|---------------|---------------|
| 9. 13% of 79    | 10. 58% of 190 | 11. 98% of 11 | 12. 41% of 20 |
| 13. 109% of 500 | 14. 73% of 21  | 15. 87% of 90 | 16. 31% of 87 |

**Estimate each percent.**

- |                  |                  |                  |
|------------------|------------------|------------------|
| 17. 19 out of 39 | 18. 20 out of 55 | 19. 4 out of 300 |
|------------------|------------------|------------------|

**20. Nutrition** If a package of 4 cookies has 205 Calories and 30% of the Calories come from fat, estimate how many of the 205 Calories are from fat.

**21. Standardized Test Practice** Choose the best estimate for 11% of 833.

- |                |               |              |             |
|----------------|---------------|--------------|-------------|
| <b>A</b> 0.083 | <b>B</b> 0.83 | <b>C</b> 8.3 | <b>D</b> 83 |
|----------------|---------------|--------------|-------------|

<b>Answers:</b> Estimates may vary. 1. $\frac{3}{10}$ 2. 75% 3. $1\frac{1}{10}$ 4. $\frac{5}{1}$ 5. $\frac{5}{2}$ 6. $\frac{10}{1}$ 7. $\frac{2}{1}$ 8. $4\frac{3}{1}$ 9. 8 10. 120 11. 11 12. 8 13. 650 14. 15 15. 81 16. 27 17. 50% 18. 40% or 33% 19. 1% 20. 60 calories 21. D
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