

# Solving Percent Problems

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 24

## Q Quick Review

There are three kinds of percent problems. **Finding the part:** to find 25% of 80, change the percent to a decimal and multiply:  $0.25 \times 80 = 20$ . **Finding the percent:** to find what percent 12 is of 48, divide the part by the whole and multiply by 100:  $\frac{12}{48} \times 100 = 25\%$ . **Finding the whole:** if 30 is 20% of a number, divide the part by the decimal:  $30 \div 0.20 = 150$ . A helpful sentence to remember is “*part is percent of whole.*”

◇ **Example:** What is 15% of 200?

⇒ This problem asks for the *part*. First, change 15% into a decimal by dividing by 100:  $15\% = 0.15$ . The word “of” tells us to multiply, so we compute  $0.15 \times 200$ . Multiplying gives 30. A quick sense-check: 10% of 200 is 20, and 15% should be a bit more than that — 30 fits nicely.

**Answer:** 30

## PRACTICE

Solve each percent problem.

- |                              |       |                               |       |
|------------------------------|-------|-------------------------------|-------|
| 1. Find 25% of 80            | _____ | 11. Find 80% of 35            | _____ |
| 2. Find 10% of 250           | _____ | 12. What percent of 20 is 7?  | _____ |
| 3. Find 40% of 60            | _____ | 13. 45 is 90% of what number? | _____ |
| 4. Find 15% of 200           | _____ | 14. Find 12% of 150           | _____ |
| 5. Find 75% of 48            | _____ | 15. What percent of 28 is 21? | _____ |
| 6. What percent of 48 is 12? | _____ | 16. Find 30% of 90            | _____ |
| 7. What percent of 36 is 9?  | _____ | 17. 24 is 60% of what number? | _____ |
| 8. 30 is 20% of what number? | _____ | 18. What percent of 50 is 35? | _____ |
| 9. 18 is 50% of what number? | _____ | 19. Find 8% of 75             | _____ |
| 10. Find 5% of 300           | _____ | 20. 16 is 40% of what number? | _____ |

## ◆ Word Problems

21. A jacket costs \$60, and it is 25% off. How much money is saved on the jacket? \_\_\_\_\_
22. Out of 40 students, 30 ride the bus. What percent of students ride the bus? \_\_\_\_\_
23. A team won 18 games, which was 60% of all the games they played. How many games did they play in all? \_\_\_\_\_
24. A water tank holds 250 gallons when full. Right now it is 36% full. How many gallons of water are in the tank? \_\_\_\_\_



## Answer Keys

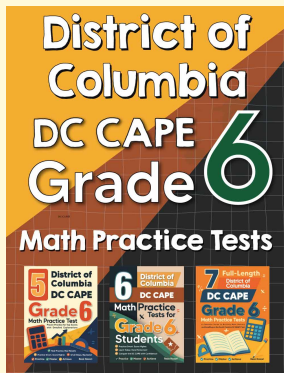
- |                                      |   |
|--------------------------------------|---|
| 1. <input type="text" value="20"/>   | 13. <input type="text" value="50"/>         |
| 2. <input type="text" value="25"/>   | 14. <input type="text" value="18"/>         |
| 3. <input type="text" value="24"/>   | 15. <input type="text" value="75%"/>        |
| 4. <input type="text" value="30"/>   | 16. <input type="text" value="27"/>         |
| 5. <input type="text" value="36"/>   | 17. <input type="text" value="40"/>         |
| 6. <input type="text" value="25%"/>  | 18. <input type="text" value="70%"/>        |
| 7. <input type="text" value="25%"/>  | 19. <input type="text" value="6"/>          |
| 8. <input type="text" value="150"/>  | 20. <input type="text" value="40"/>         |
| 9. <input type="text" value="36"/>   | 21. <input type="text" value="\$15"/>       |
| 10. <input type="text" value="15"/>  | 22. <input type="text" value="75%"/>        |
| 11. <input type="text" value="28"/>  | 23. <input type="text" value="30 games"/>   |
| 12. <input type="text" value="35%"/> | 24. <input type="text" value="90 gallons"/> |

### Step-by-Step Explanations

- |  |  |
|--|--|
| <p>1. Change to a decimal and multiply: <math>0.25 \times 80 = 20</math>.</p> <p>2. 10% is 0.10, and <math>0.10 \times 250 = 25</math>.</p> <p>3. 40% is 0.40, and <math>0.40 \times 60 = 24</math>.</p> <p>4. 15% is 0.15, and <math>0.15 \times 200 = 30</math>.</p> <p>5. 75% is 0.75, and <math>0.75 \times 48 = 36</math>.</p> <p>6. Divide part by whole: <math>\frac{12}{48} \times 100 = 25\%</math>.</p> <p>7. Divide: <math>\frac{9}{36} \times 100 = 25\%</math>.</p> <p>8. Divide the part by the decimal: <math>30 \div 0.20 = 150</math>.</p> <p>9. 50% is half, so the whole is <math>18 \div 0.50 = 36</math>.</p> <p>10. 5% is 0.05, and <math>0.05 \times 300 = 15</math>.</p> <p>11. 80% is 0.80, and <math>0.80 \times 35 = 28</math>.</p> <p>12. Divide: <math>\frac{7}{20} \times 100 = 35\%</math>.</p> | <p>13. Divide the part by the decimal: <math>45 \div 0.90 = 50</math>.</p> <p>14. 12% is 0.12, and <math>0.12 \times 150 = 18</math>.</p> <p>15. Divide: <math>\frac{21}{28} \times 100 = 75\%</math>.</p> <p>16. 30% is 0.30, and <math>0.30 \times 90 = 27</math>.</p> <p>17. Divide the part by the decimal: <math>24 \div 0.60 = 40</math>.</p> <p>18. Divide: <math>\frac{35}{50} \times 100 = 70\%</math>.</p> <p>19. 8% is 0.08, and <math>0.08 \times 75 = 6</math>.</p> <p>20. Divide the part by the decimal: <math>16 \div 0.40 = 40</math>.</p> <p>21. Find 25% of 60: change to 0.25 and multiply, <math>0.25 \times 60 = 15</math>. The savings are \$15.</p> <p>22. Divide the part by the whole: <math>\frac{30}{40} = 0.75</math>. Then <math>0.75 \times 100 = 75\%</math>.</p> <p>23. 18 is 60% of the whole, so divide: <math>18 \div 0.60 = 30</math> games.</p> <p>24. Find 36% of 250: <math>0.36 \times 250 = 90</math> gallons.</p> |
|--|--|



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