

Finding the Whole from a Part and Percent

Name: _____ Date: _____ Score: _____ / 18

Quick Review and Helpful Hints

When a *part* is a known percent of a whole, find the whole by *dividing* the part by the percent (written as a decimal): $\text{whole} = \text{part} \div \text{percent}$. For example, if 25% is known, divide by 0.25.

► **Example:** 20 is 25% of what number? **Work:** Divide the part by the percent as a decimal: $20 \div 0.25 = 80$. **★ Answer:** 80

part whole

$\text{whole} = \text{part} \div \text{percent}$.

◆ Practice Problems

Find the whole.

- | | | | |
|-------------------|-------|-------------------|-------|
| 1. 20 is 25% of? | _____ | 8. 5 is 5% of? | _____ |
| 2. 10 is 50% of? | _____ | 9. 40 is 80% of? | _____ |
| 3. 15 is 10% of? | _____ | 10. 3 is 10% of? | _____ |
| 4. 6 is 20% of? | _____ | 11. 18 is 60% of? | _____ |
| 5. 9 is 30% of? | _____ | 12. 7 is 50% of? | _____ |
| 6. 50 is 100% of? | _____ | 13. 25 is 50% of? | _____ |
| 7. 12 is 25% of? | _____ | 14. 8 is 40% of? | _____ |

◆ Word Problems

15. A tip of \$6 is 20% of the bill. Find the bill. _____
16. 30 students passed, which is 75% of the class. Find the class size. _____
17. \$12 is 25% of a price. Find the price. _____
18. 9 is 30% of what number? _____



Answer Keys

- | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. <input type="text" value="80"/> | 7. <input type="text" value="48"/> | 13. <input type="text" value="50"/> |
| 2. <input type="text" value="20"/> | 8. <input type="text" value="100"/> | 14. <input type="text" value="20"/> |
| 3. <input type="text" value="150"/> | 9. <input type="text" value="50"/> | 15. <input type="text" value="30"/> |
| 4. <input type="text" value="30"/> | 10. <input type="text" value="30"/> | 16. <input type="text" value="40"/> |
| 5. <input type="text" value="30"/> | 11. <input type="text" value="30"/> | 17. <input type="text" value="48"/> |
| 6. <input type="text" value="50"/> | 12. <input type="text" value="14"/> | 18. <input type="text" value="30"/> |

Step-by-Step Explanations

1. Start by naming the process: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $20 \div 0.25 = 80$. So the final answer is 80.
2. A good way to think about this is: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $10 \div 0.50 = 20$. So the final answer is 20.
3. Step by step: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $15 \div 0.10 = 150$. So the final answer is 150.
4. Take it one move at a time: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $6 \div 0.20 = 30$. So the final answer is 30.
5. Start by naming the process: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $9 \div 0.30 = 30$. So the final answer is 30.
6. A good way to think about this is: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $50 \div 1 = 50$. So the final answer is 50.
7. Step by step: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $12 \div 0.25 = 48$. So the final answer is 48.
8. Take it one move at a time: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $5 \div 0.05 = 100$. So the final answer is 100.
9. Start by naming the process: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $40 \div 0.80 = 50$. So the final answer is 50.
10. A good way to think about this is: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $3 \div 0.10 = 30$. So the final answer is 30.
11. Step by step: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $18 \div 0.60 = 30$. So the final answer is 30.
12. Take it one move at a time: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $7 \div 0.50 = 14$. So the final answer is 14.
13. Start by naming the process: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $25 \div 0.50 = 50$. So the final answer is 50.
14. A good way to think about this is: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $8 \div 0.40 = 20$. So the final answer is 20.
15. Step by step: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $6 \div 0.20 = 30$. So the final answer is 30.
16. Take it one move at a time: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $30 \div 0.75 = 40$. So the final answer is 40.
17. Start by naming the process: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $12 \div 0.25 = 48$. So the final answer is 48.
18. A good way to think about this is: When a part is a percent of a whole, change the percent to a decimal and divide the part by that decimal. The setup/work is $9 \div 0.30 = 30$. So the final answer is 30.



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