Solving Percent Problems

Spot mistakes, reason, and work backward

Name _____ **Date** _____ **Score** _____ / 10

QUICK REVIEW

Percent means per hundred. Use part $=$ (percent$/100)\times$ whole; divide by that rate to find the whole. For example, 20% of 60 is $(20/100)60 = 12$. The percent number is $12/60 \times 100 = 20$, so the rate is 20%.

Worked example

Example: find 20% of 60.

1. $20\% = \frac{1}{5}$.
2. The part is $60(\frac{1}{5}) = 12$.
3. The rest is $60 - 12 = 48$.
Answer: 12.

Practice Problems

Show your thinking.

1. Library books: Eli says 15% of 120 is 138. Find the correct part and identify the extra operation.

2. Club survey: 30% of a total is 30. A student multiplies 30 by $30/100$. Find the total instead.

3. Garden plots: Bea uses $40/20 \times 100$ for the percent of 40 represented by 20. Correct the fraction. Explain why the total, not the qualifying count, is the denominator.

4. Seats: Eli says 35% of 160 is 216. Find the correct part and identify the extra operation. Write an equation with an unknown part before evaluating.

5. Team badges: 25% of a total is 35. A student multiplies 35 by $25/100$. Find the total instead. Give a numerical substitution check for the reconstructed whole.

6. Completed puzzles: Bea uses $45/27 \times 100$ for the percent of 45 represented by 27. Correct the fraction.

7. Museum badges: Eli says 45% of 120 is 174. Find the correct part and identify the extra operation.

8. Music club: 40% of a total is 36. A student multiplies 36 by $40/100$. Find the total instead.

9. Seed trays: Bea uses $24/18 \times 100$ for the percent of 24 represented by 18. Correct the fraction.

10. Workshop seats: find 35% of 200.

Answer Key

1. 18; Eli added the whole to the part.
2. Total 100.
3. Use $20/40$; 50%. Percent compares the part with the whole set of 40.
4. $p = (35/100)(160)$. 56; Eli added the whole to the part.
5. Total 140.
6. Use $27/45$; 60%.
7. 54; Eli added the whole to the part.
8. Total 90.
9. Use $18/24$; 75%.
10. 70.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. $15\% = \frac{3}{20}$.
2. The part is $120(\frac{3}{20}) = 18$.
3. The reported value is $18 + 120 = 138$; adding the whole was the extra operation, not part of finding the percent part.

Problem 2

1. Let w be the whole: $(30/100)w = 30$.
2. $w = 30 \div (30/100) = 100$.
3. Check: $(30/100)(100) = 30$; the remainder is $100 - 30 = 70$.

Problem 3

1. The part-to-whole ratio is $20/40 = \frac{1}{2}$.
2. Percent number: $\frac{1}{2} \times 100 = 50$; therefore the rate is 50%.
3. Check $(50/100)(40) = 20$.

Problem 4

1. Part equation: $p = (35/100)(160)$.
2. $35\% = \frac{7}{20}$.
3. The part is $160(\frac{7}{20}) = 56$.
4. The reported value is $56 + 160 = 216$; adding the whole was the extra operation, not part of finding the percent part.

Problem 5

1. Let w be the whole: $(25/100)w = 35$.
2. $w = 35 \div (25/100) = 140$.
3. Check: $(25/100)(140) = 35$; the remainder is $140 - 35 = 105$.

Problem 6

1. The part-to-whole ratio is $27/45 = \frac{3}{5}$.
2. Percent number: $\frac{3}{5} \times 100 = 60$; therefore the rate is 60%.
3. Check $(60/100)(45) = 27$.

Problem 7

1. $45\% = \frac{9}{20}$.
2. The part is $120(\frac{9}{20}) = 54$.
3. The reported value is $54 + 120 = 174$; adding the whole was the extra operation, not part of finding the percent part.

Problem 8

1. Let w be the whole: $(40/100)w = 36$.
2. $w = 36 \div (40/100) = 90$.
3. Check: $(40/100)(90) = 36$; the remainder is $90 - 36 = 54$.

Problem 9

1. The part-to-whole ratio is $18/24 = \frac{3}{4}$.
2. Percent number: $\frac{3}{4} \times 100 = 75$; therefore the rate is 75%.
3. Check $(75/100)(24) = 18$.

Problem 10

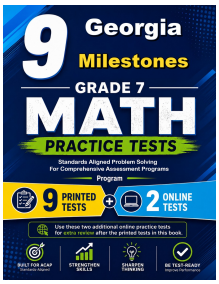
1. $35\% = \frac{7}{20}$.
2. The part is $200(\frac{7}{20}) = 70$.
3. The rest is $200 - 70 = 130$.

TESTINAR

Keep Building Grade 7 Math Skills

Choose the practice book matched to your state assessment and turn worksheet practice into a complete test-prep plan.

All Grade 7 books



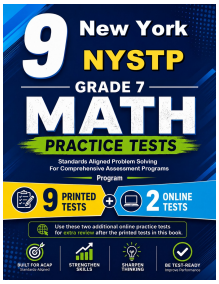
GEORGIA MILESTONES

9 Full-Length Math Practice Tests

Build Grade 7 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook



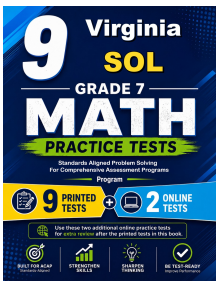
NEW YORK NYSTP

9 Full-Length Math Practice Tests

Build Grade 7 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook



VIRGINIA SOL

9 Full-Length Math Practice Tests

Build Grade 7 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 7 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/7