

Grade 7 - Percent Problems: Tax, Tips, Discounts and Markups - Test Answer Key

Common Core 7.RP.A.3 · maths-pdf.fr/en/

Use this answer key and scoring guide to grade the percent problems test. Each solution shows the full work, and the scoring note explains how the points are awarded. Give partial credit for correct steps even when the final answer is wrong.

Grade 7 · Common Core State Standards: **7.RP.A.3**

Question 1 - Tip and total [2 pts]

$$0.20 \times 30 = 6, 30 + 6 = 36$$

Tip \$6; total \$36

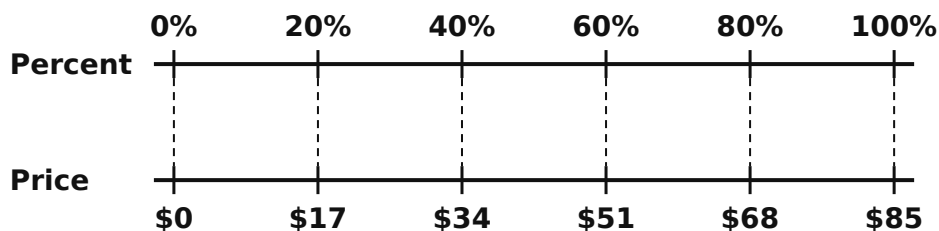
Scoring: 1 point for the tip; 1 point for the total.

Question 2 - Discount [2 pts]

Discount: $0.20 \times 85 = 17$.

$$85 - 17 = 68$$

\$68



Each 20% is \$17.

Scoring: 1 point for the discount amount; 1 point for the sale price.

Question 3 - Percent change [2 pts]

$$46 - 40 = 6, 6 \div 40 = 0.15 = 15\%$$

15%

Scoring: 1 point for the change over the original; 1 point for 15%.

Question 4 - Original price [2 pts]

$$0.9p = 270, p = 270 \div 0.9 = 300$$

\$300

Scoring: 1 point for the equation or ratio setup; 1 point for \$300.

Question 5 - Simple interest [2 pts]

$$1500 \times 0.04 \times 3 = 180; 1500 + 180 = 1680$$

Interest \$180; balance \$1,680

Scoring: 1 point for the interest; 1 point for the balance.

Question 6 - Markup then discount [2 pts]

$$\text{Marked price: } 1.5 \times 40 = 60.$$

$$\text{Selling price: } 0.9 \times 60 = 54.$$

\$54

Scoring: 1 point for the marked price; 1 point for the final price.

Question 7 - Commission [2 pts]

$$0.05 \times 2000 = 100; 300 + 100 = 400.$$

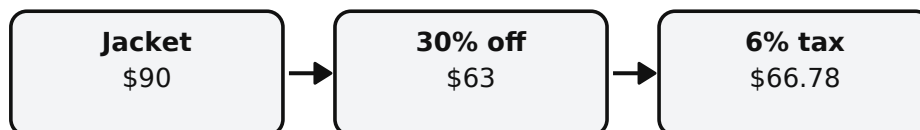
$$450 - 300 = 150; 150 \div 0.05 = 3000.$$

\$400; \$3,000

Scoring: 1 point for \$400; 1 point for \$3,000.

Question 8 - Two-step purchase [3 pts]

- a. $0.7 \times 90 = 63$.
- b. $1.06 \times 63 = 66.78$.
- c. Without discount: $1.06 \times 90 = 95.40$; saved $95.40 - 66.78 = 28.62$; $28.62 \div 95.40 = 0.30 = 30\%$.



Results at each step.

Scoring: 1 point for each part.

Question 9 - Measurement error [3 pts]

- a. $|5 - 5.4| = 0.4$, $0.4 \div 5.4 \approx 0.074$, about 7.4%.
- b. $|5.6 - 5.4| = 0.2$, $0.2 \div 5.4 \approx 0.037$, about 3.7%.
- c. The second hiker is closer, because 3.7% is less than 7.4%.

7.4%; 3.7%; the second hiker

Scoring: 1 point for each part. Percent error divides by the actual value, 5.4.

Total

20 points