

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

Common Core 7.RP.A.3 · mathovore.fr

Complete solutions and scoring guide for the 20-point test on multistep percent problems. Award each point as described, and give credit for a correct method with a small arithmetic slip. Where a multiplier method is used instead of the two-step method, accept it. Total score is out of 20.

Grade 7 Common Core: 7.RP.A.3

Question 1: Sales tax (2 points)

- a. $0.06 \times 34 = 2.04$, so the tax is \$2.04.
- b. $34 + 2.04 = 36.04$, so the total is \$36.04.

Scoring: 1 point for the tax; 1 point for the total. Accept $34 \times 1.06 = 36.04$.

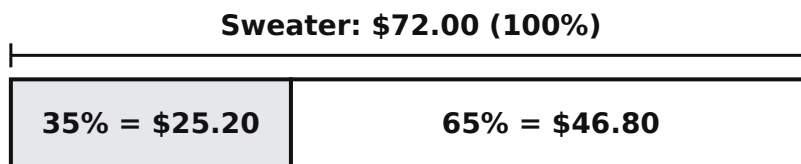
Question 2: Restaurant tip (2 points)

- a. $0.18 \times 48 = 8.64$, so the tip is \$8.64.
- b. $48 + 8.64 = 56.64$, so Jamal pays \$56.64.

Scoring: 1 point for the tip; 1 point for the total (accept 48×1.18).

Question 3: Sweater discount (3 points)

- a. $0.35 \times 72 = 25.2$, so the discount is \$25.20.
- b. $72 - 25.2 = 46.8$, so the sale price is \$46.80.
- c. $100\% - 35\% = 65\%$. Check: $\frac{46.8}{72} = 0.65$.



The completed bar model.

Scoring: 1 point per part (a), (b), (c).

Question 4: Bookstore markup (3 points)

- a. $11.20 - 8.00 = 3.20$, so the markup is \$3.20.
- b. $\frac{3.20}{8.00} = 0.40 = 40\%$.
- c. $15 \times 1.40 = 21$, so the selling price is \$21.00.

Selling price: \$11.20	
Cost \$8.00	\$3.20

The markup is \$3.20, which is 40% of the cost.

Scoring: 1 point for \$3.20; 1 point for 40% (the markup is divided by the cost, not the selling price); 1 point for \$21.00.

Question 5: Commission (2 points)

- a. $0.045 \times 6400 = 288$, so \$288.
- b. $0.045 \times S = 450$, so $S = 450 \div 0.045 = 10000$, that is \$10,000 in sales.

Scoring: 1 point for \$288; 1 point for \$10,000.

Question 6: Simple interest (3 points)

- a. $I = 2500 \times 0.032 \times 5$. First, $2500 \times 0.032 = 80$ per year, and $80 \times 5 = 400$. The interest is \$400.
- b. $2500 + 400 = 2900$, so the balance is \$2,900.
- c. $80 \times t = 240$, so $t = 3$ years.

Scoring: 1 point for \$400; 1 point for \$2,900; 1 point for 3 years.

Question 7: Jeans on sale (3 points)

- a. $55 \times 0.75 = 41.25$, so the sale price is \$41.25.
- b. $41.25 \times 0.07 = 2.8875$, which rounds to \$2.89.
- c. $41.25 + 2.89 = 44.14$, so the total is \$44.14.

Clothing Store	
Jeans	\$55.00
Discount (25%)	-\$13.75
Sale price	\$41.25
Sales tax (7%)	\$2.89
Total	\$44.14

The completed receipt.

Scoring: 1 point for the sale price; 1 point for the tax rounded to \$2.89; 1 point for the total. Do not penalize a total of \$44.14 reached by 41.25×1.07 .

Question 8: Lamp discount (2 points)

- The sale price is $100\% - 20\% = 80\%$ of the original: $0.80 \times P = 28$, so $P = 28 \div 0.80 = 35$. The original price was \$35.
- $35 - 28 = 7$, so the discount is \$7.

Scoring: 1 point for \$35 (28 divided by 0.80, not 28 times 1.20); 1 point for \$7.

Total
20 points