

Solving Multistep Percent Problems with Tax, Tips and Discounts

Grade 7 math · Worksheet Answer Key · Standards: 7.RP.A.3

Each solution shows the percent converted to a decimal, every intermediate amount and the final answer in bold. If your answer differs by a few cents, check whether you rounded too early.

Standards: 7.RP.A.3 · **Level:** Grade 7

Problem 1 Tip on a Meal

Tip: $0.18 \times 36.50 = 6.57$.

Total: $36.50 + 6.57 = 43.07$.

Answer: **tip \$6.57; total \$43.07**

Problem 2 Sales Tax on Headphones

Tax: $0.0625 \times 84 = 5.25$.

Total: $84 + 5.25 = 89.25$.

Answer: **tax \$5.25; total \$89.25**

Problem 3 Shoe Discount

Discount: $0.40 \times 65 = 26$.

Sale price: $65 - 26 = 39$.

Answer: **discount \$26; sale price \$39.00**

Problem 4 Furniture Commission

$0.06 \times 2,450 = 147$.

Answer: **\$147**

Problem 5 Simple Interest Basics

$$I = Prt = 1,200 \times 0.035 \times 4 = 168.$$

$$\text{Balance: } 1,200 + 168 = 1,368.$$

Answer: **interest \$168; balance \$1,368**

Problem 6 Scooter Markup

$$\text{Markup: } 0.45 \times 90 = 40.50.$$

$$\text{Selling price: } 90 + 40.50 = 130.50.$$

Answer: **markup \$40.50; selling price \$130.50**

Problem 7 Tax and Tip Together

$$\text{Tax: } 0.08 \times 48 = 3.84. \text{ Tip: } 0.20 \times 48 = 9.60.$$

$$\text{Total: } 48 + 3.84 + 9.60 = 61.44. \text{ (Check: } 48 \times 1.28 = 61.44.)$$

Answer: **\$61.44**

Problem 8 Backpack Sale Then Tax

$$\text{Sale price: } 52 \times 0.75 = 39.00.$$

$$\text{Tax: } 39 \times 0.07 = 2.73.$$

$$\text{Total: } 39 + 2.73 = 41.73.$$

Answer: **\$41.73**



Discount, then tax.

Problem 9 Two Discounts in a Row

$$\text{After 20% off: } 150 \times 0.80 = 120.$$

After the extra 10% off: $120 \times 0.90 = 108$.

A single 30% discount gives $150 \times 0.70 = 105$.

Answer: **\$108; it is not the same, because it costs \$3 more than 30% off**

Problem 10 Base Pay Plus Commission

Commission: $0.045 \times 5,200 = 234$.

Pay: $380 + 234 = 614$.

Answer: **\$614**

Problem 11 Finding the Time

$I = Prt$: $225 = 2,500 \times 0.03 \times t$, so $225 = 75t$.

$t = 225 \div 75 = 3$.

Answer: **3 years**

Problem 12 Finding the Rate

$270 = 1,800 \times r \times 5$, so $270 = 9,000r$.

$r = 270 \div 9,000 = 0.03 = 3\%$.

Answer: **3% per year**

Problem 13 Percent Markup on Cost

Markup: $3.90 - 2.40 = 1.50$.

$1.50 \div 2.40 = 0.625 = 62.5\%$.

Answer: **62.5% markup**

Problem 14 Meal Price Before the Tip

The total is 115% of the meal: $1.15 \times \text{meal} = 45.54$.

Meal: $45.54 \div 1.15 = 39.60$.

Tip: $45.54 - 39.60 = 5.94$.

Answer: **meal \$39.60; tip \$5.94**



Check: $39.60 + 5.94 = 45.54$.

Problem 15 Concert Ticket Fees

Subtotal: $4 \times 62.50 = 250$.

Service fee: $0.08 \times 250 = 20$. Fees together: $20 + 6.50 = 26.50$.

Total: $250 + 26.50 = 276.50$.

Fee percent: $26.50 \div 250 = 0.106 = 10.6\%$.

Answer: **\$276.50; fees are 10.6% of the subtotal**

Problem 16 Comparing Savings Plans

A: $3,200 \times 0.0275 \times 6 = 88 \times 6 = 528$.

B: $3,200 \times 0.03 \times 5 = 96 \times 5 = 480$.

$528 - 480 = 48$.

Answer: **Plan A earns \$48 more (\$528 versus \$480)**

Problem 17 Which Store Is Cheaper

A: $240 \times 0.85 = 204$. Tax: $204 \times 0.06 = 12.24$. Total: 216.24.

B: $225 \times 1.08 = 243.00$.

$243.00 - 216.24 = 26.76$.

Answer: **Store A is cheaper by \$26.76 (\$216.24 versus \$243.00)**

Problem 18 Tiered Commission

On \$7,500: $5\% \text{ of } 3,000 = 150$. Above: $7,500 - 3,000 = 4,500$, and $8\% \text{ of } 4,500 = 360$. Total: 510.

For \$700: $700 - 150 = 550$ must come from the 8% part. $550 \div 0.08 = 6,875$. Sales: $3,000 + 6,875 = 9,875$.

Check: $150 + 0.08 \times 6,875 = 150 + 550 = 700$.

Answer: **\$510; \$9,875 in sales**

Problem 19 Splitting the Check

Tax: $0.075 \times 80 = 6.00$. Tip: $0.18 \times 80 = 14.40$.

Total: $80 + 6 + 14.40 = 100.40$.

Each: $100.40 \div 4 = 25.10$.

Answer: **\$25.10 per person**

Problem 20 Markup Then Sale

Marked price: $140 \times 1.60 = 224$.

Sale price: $224 \times 0.75 = 168$.

Profit: $168 - 140 = 28$.

$28 \div 140 = 0.20 = 20\%$.

Answer: **sale price \$168; profit \$28, which is 20% of cost**



Markup, then markdown.