

Personal Financial Literacy

Algebra 1 • Section 1.5

Name: _____

Date: _____

Score: _____ / 12

Quick Review and Helpful Hints

Algebra becomes easier when every symbol has a job. Read the operation first, keep signs attached to their terms, and check that each step still means the same thing as the original expression.

▷ **Example:** Simplify $2(x + 6) + 3x$.

Work: Distribute first: $2(x + 6) = 2x + 12$. Then combine like terms: $2x + 12 + 3x = 5x + 12$.

★ **Answer:** $5x + 12$

◆ Practice Problems

Solve each problem. Show enough work that another student could follow your thinking.

- | | |
|---|---|
| 1. Find simple interest: $P = \$300$, $r = 4\%$, $t = 5$ years. _____ | 6. A \$150 item is marked up by 12%. Find the new price. _____ |
| 2. Find the final amount for simple interest: $P = \$800$, $r = 3\%$, $t = 2$. _____ | 7. Compound annually: \$500 at 6% for 2 years. _____ |
| 3. Find 20% off \$75. _____ | 8. Which is larger after one year: \$900 at 4% simple or compound annually? _____ |
| 4. Add 7% tax to \$40. _____ | 9. A jacket costs \$64 after a 20% discount. What was the original price? _____ |
| 5. A salesperson earns 5% commission on \$2,400 in sales. Find the commission. _____ | 10. Find the percent increase from 50 to 62. _____ |

◆ Word Problems

11. A bike costs \$220. It is discounted 15% and then taxed 8%. Find the final price. _____
12. Leah deposits \$1,200 at 5% simple interest for 3 years. Find the balance. _____



Answer Keys

- | | |
|------------|-------------------|
| 1. \$60 | 7. \$561.80 |
| 2. \$848 | 8. They are equal |
| 3. \$60 | 9. \$80 |
| 4. \$42.80 | 10. 24% |
| 5. \$120 | 11. \$201.96 |
| 6. \$168 | 12. \$1,380 |

Step-by-Step Explanations

- Simple interest is just $I = Prt$. Turn 4% into the decimal 0.04, then $300(0.04)(5)$ earns you \$60.
- First find what the money earns: $800(0.03)(2) = 48$. The final amount is your original plus that growth: \$848.
- A discount is money coming off. Twenty percent of \$75 is \$15, so the price drops to $75 - 15 = \$60$.
- Tax gets added on top, never subtracted. Here $0.07(40) = 2.80$, so you pay $40 + 2.80 = \$42.80$.
- Commission is just a slice of total sales. Take 5% as 0.05 and multiply: $0.05(2400) = \$120$.
- A markup raises the price, so it gets added. The increase is $0.12(150) = 18$, pushing the new price to \$168.
- With compounding, each year grows on the last. Use $A = 500(1.06)^2$, and $500(1.1236)$ rounds to \$561.80.
- Over a single year there's nothing for compounding to build on yet — both just multiply by 1.04, landing on the same \$936.
- If 20% came off, you paid 80% of the original. So 0.80 of the price is \$64 — undo that and the price was \$80.
- Percent change compares the jump to where you started. The rise is 12, and 12 out of 50 is 0.24, or 24%.
- Do the steps in order: the discount makes it $220(0.85) = 187$, then 8% tax on that gives $187(1.08) = \$201.96$.
- Her interest grows by $1200(0.05)(3) = 180$. The balance is her deposit plus that earnings: $1200 + 180 = \$1,380$.



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