

Grade 7 • Unit 4 Worksheet

Proportional Relationships and Percentages

Name: _____

Date: _____

Part A • Warm-up: Percent of a Number

Compute mentally or with quick work.

10% of 80 = _____	25% of 40 = _____	50% of 36 = _____	1% of 250 = _____
15% of 60 = _____	75% of 200 = _____	150% of 30 = _____	0.5% of 400 = _____

Part B • Percent Increase & Decrease

- A shirt that was \$40 is on sale for \$30.
 - Amount of decrease in dollars: _____
 - Percent decrease: _____ % (show your work below)

c. Equation: $30 = 40 \times$ _____

- A town's population grew from 5,000 to 6,500.

Percent increase: _____ %

Write an equation that shows the new population as 'old $\times$ something'. New = $5000 \times$ _____

Part C • Finding the Original (the Tricky Direction)

- After a 20% discount, a jacket costs \$48. What was the ORIGINAL price?

Show your work (try a tape diagram or equation):

Original price = \$ _____

4. A salary increased by 25% to \$50,000. What was the salary BEFORE the increase?

Show your work:

Original salary = \$ _____

Part D • Multi-Step Tax and Tip

5. Diego's restaurant bill is \$54.00 before tax. Sales tax is 8%, and he tips 18% of the PRE-TAX amount.

- a. Tax amount: \$ _____
- b. Tip amount: \$ _____
- c. Total Diego pays: \$ _____

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6. A store marks up wholesale prices by 60%, then offers a 25% discount. A blender's wholesale cost is \$40.

Price after markup: \$ _____

Price after discount: \$ _____

What single percent of the wholesale price does the customer actually pay? _____ % (Show your reasoning.)

Part E • Percent of vs Percent More (the Classic Trap)

7. Tyler says: "60 is 20% MORE than 50, AND 60 is also 120% OF 50." Are both statements correct?

Test each statement.

Both correct? ☐ Yes ☐ No. Explain how they relate.

8. Mai says: "If something INCREASES by 30%, then DECREASES by 30%, you're back where you started." Test this with a starting value of \$100.

After 30% increase: \$ _____

After 30% decrease from THAT amount: \$ _____

Is Mai correct? ☐ Yes ☐ No. Explain WHY (in terms of the base).

Part F • Percent Error & Real-World Reasoning

9. Han estimated a building's height as 50 m. The actual height is 60 m.

Han's measurement error in meters: _____ m

Percent error (relative to actual): _____ %

10. A news headline says: "Crime up 50% in our city!" The original number was 8 crimes in a year; the new number is 12.

Verify: is the headline mathematically correct? Show your work.

Is this headline misleading even if technically true? Explain in 2-3 sentences.
