

Accelerated 6 • Unit 6 Worksheet

Percent Increase and Decrease

Name: _____

Date: _____

Part A • Quick Computations

50 + 10% of 50 _____	80 - 25% of 80 _____	Increase \$40 by 5% _____	Decrease 100 by 90% _____
--------------------------------	--------------------------------	-------------------------------------	-------------------------------------

Part B • Percent Change

1. A jacket was \$60. The price increased to \$75.

- What is the percent INCREASE? _____%
- Suppose later the \$75 price decreases back to \$60. What is the percent DECREASE? _____%
- Why is the percent INCREASE different from the percent DECREASE — even though the dollar change is the same?

2. Diego's piggy bank grows from \$40 to \$50. Sara's piggy bank grows from \$200 to \$210. Both grew by \$10.

- Whose piggy bank grew by a LARGER PERCENTAGE?

Diego: _____% Sara: _____%

- Why does the same dollar amount represent very different percentages?
-

Part C • Applying Percentages

3. A book costs \$24 before tax. The sales tax rate is 8%. What is the total cost? Show your work TWO ways.

Way 1. (find the tax, then add)

Way 2. (multiply by 1.08 directly)

Why does multiplying by 1.08 give the same answer?

4. A coat is marked DOWN 30% to a sale price of \$42. What was the ORIGINAL price?

Set up an equation. (Hint: $0.70 \cdot \text{original} = \42)

Original price: \$_____

Han claims: 'I'll add 30% of \$42 to \$42 to get the original.' Is Han right? Test his method.

5. A restaurant bill is \$48. You add a 20% tip. Then a friend tells you to recalculate the tip on the AFTER-TAX amount, where tax is 7%. Compare the two tips.

Tip on \$48: _____

After-tax amount (7% tax on \$48): _____

Tip on after-tax amount: _____

Difference: _____. Is this a lot? Comment.

Part D • Proportional Reasoning with Fractions

6. A recipe calls for $2\frac{1}{2}$ cups of flour to make 12 cookies. How much flour for 30 cookies? Solve at least two ways.

Way 1. (use a unit rate: per cookie)

Way 2. (scale the recipe: factor)

Part E • Thinking Deeply

7. A stock's price rises 50% on Monday. Then it falls 50% on Tuesday. What is the FINAL price as a percentage of the START?

Try with a START of \$100. After Monday: _____. After Tuesday: _____.

Final as percent of start: _____%

Now generalize: explain WHY the answer is NOT 100%.

8. A company raises ALL employees' wages by 5%. Then management decides salaries are still too high and lowers everyone's wage by 5%. Are the salaries back to the original?

Use specific numbers (start with a \$40,000 salary):

Is the salary back to \$40,000? ☐ Yes ☐ No

What is the final salary as a percentage of the start? _____%

9. Lin asks: "What percent increase brings \$80 to \$100? What percent decrease brings \$100 to \$80?"

Percent increase (\$80 → \$100): _____%

Percent decrease (\$100 → \$80): _____%

These are different. Why?

Generalize: when going from A to B is +p%, going from B to A is what %?

10. Mai claims: "Going UP by 10% three years in a row is the same as going up by 30% over three years." Test this with \$100.

After 3 years of 10% growth each year:

After a single 30% growth:

Difference: \$_____

Which gives MORE growth, and why?
