

Smart Shopping: Percentages, Discounts, and Best Buys — Teacher copy

Answers and suggested responses

Welcome to the Smart Shopping challenge! In this worksheet, you will apply your math skills to compare discounts, calculate unit prices, and make smart purchasing decisions. Remember to show all your work and state any assumptions you make.

Part I: Percentage Discounts

Calculate the discount amount and the final sale price for each item. Show your step-by-step calculations.

1. A backpack normally costs \$45. It is on sale for 20% off.

- a) Calculate the discount amount.
 - b) Calculate the final sale price.
- Show your step-by-step calculations. (3 pts)

Answer: a) Discount = 20% of 45 = $0.20 * 45 = 9.00$.

b) Final Price = $45.00 - 9.00 = \$36.00$.

2. A gaming keyboard normally costs \$80. It is on sale for 15% off.

- a) Calculate the discount amount.
 - b) Calculate the final sale price.
- Show your step-by-step calculations. (3 pts)

Answer: a) Discount = 15% of 80 = $0.15 * 80 = 12.00$.

b) Final Price = $80.00 - 12.00 = \$68.00$.

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Part 2: Unit Price Comparisons

Determine the unit rate (cost per single item or ounce) to compare different bulk shopping deals. Explain which option is the better buy.

3. Brand A sells a 6-pack of juice boxes for \$3.60. Brand B sells an 8-pack of the same juice boxes for \$4.40.

a) Calculate the unit price (cost per juice box) for both brands.

b) Which brand is the better buy? Explain your reasoning. (4 pts)

Answer: a) Brand A: $3.60/6 = 0.60$ per juice box.

Brand B: $4.40/8 = 0.55$ per juice box.

b) Brand B is the better buy because it costs \$0.55 per box, which is \$0.05 cheaper than Brand A (\$0.60 per box).

4. A 12-ounce jar of honey costs \$5.40, while an 18-ounce jar of the same honey costs \$7.20.

a) Calculate the unit price (cost per ounce) for both jars.

b) Which jar is the better buy? Explain your reasoning. (4 pts)

Answer: a) 12-oz jar: $5.40/12 = 0.45$ per ounce.

18-oz jar: $7.20/18 = 0.40$ per ounce.

b) The 18-ounce jar is the better buy because it costs \$0.40 per ounce, which is \$0.05 cheaper than the 12-ounce jar (\$0.45 per ounce).

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Part 3: Best Buy Decisions

Compare a percentage discount to a multi-buy offer to determine and justify which deal represents the best buy.

5. You want to buy 2 t-shirts that normally cost \$20 each. You find two different deals:

- **Deal 1:** 30% off the original price of each t-shirt.
- **Deal 2:** Buy One, Get One Half Off (BOGO 50% off) the original price.

- a) Calculate the total cost for buying 2 t-shirts under both deals.
- b) Which deal is the better buy? Justify your answer with calculations. (5 pts)

Answer: Deal 1 (30% off): $0.30 \times 20 = 6$ dollars discount per shirt. Each shirt costs $20 - 6 = 14$ dollars. Two shirts cost $2 \times 14 = 28$ dollars. Deal 2 (buy one, get one 50% off): first shirt 20 dollars; second shirt $0.50 \times 20 = 10$ dollars; total $20 + 10 = 30$ dollars. Deal 1 is the better buy for two shirts of equal quality because it costs 2 dollars less.

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Exit Ticket: Best Buy Check-In

Complete this quick check-out to show what you've learned today about discounts and reasonableness.

6. A video game normally costs \$40. It is on sale for 15% off.

Calculate the final sale price of the video game. Show your work. (2 pts)

Answer: Discount = 15% of 40 = $0.15 * 40 = 6$. Final Price = $40 - 6 = \$34$.

7. Write one sentence explaining how you know your calculated final price from Question 6 is reasonable (e.g., using estimation or mental math).

Answer: Since 10% of \$40 is \$4 and 5% is \$2, the total discount is \$6, so $40 - 6 = \$34$ is exactly correct and reasonable.