

## AI Budget Scenarios Answer Key

### Problem 1: Customer Chatbot

- Small:  $40 \times \$2 = \$80$  ✓ affordable
- Big:  $40 \times \$10 = \$400$  ✗ too expensive

**Answer: Small models only**

### Problem 2: Document Summaries

- Small:  $25 \times \$2 = \$50$  ✓ fits
- Big:  $25 \times \$10 = \$250$  ✗ over budget

**Answer: Small models**

### Problem 3: Technical Translations

- Small:  $12 \times \$2 = \$24$  ✓ fits
  - Big:  $12 \times \$10 = \$120$  ✗ too expensive
- Answer: Only small models work within \$100**

### Problem 4: Tutoring Sessions

- Small:  $30 \times \$2 = \$60$  ✓ fits
- Big:  $30 \times \$10 = \$300$  ✗ over budget

**Answer: Small models**

### Problem 5: Research Lab

- Small:  $15 \times \$2 = \$30$  ✓ within budget
  - Big:  $15 \times \$10 = \$150$  ✗ over budget
- Answer: Small models fit budget, but big models would be more suitable if more money were available**

### Problem 6: Marketing Help

- Small:  $50 \times \$2 = \$100$  ✓ exactly budget
- Big:  $50 \times \$10 = \$500$  ✗ too expensive

**Answer: Small models only**

### Problem 7: Mixed Tasks

- Small:  $20 \times \$2 = \$40$
  - Big:  $5 \times \$10 = \$50$
  - Total =  $\$90$  ✓ fits budget
- Answer: The mix works (20 small + 5 big)**

### Problem 8: Balanced Use

- Half budget for small =  $\$50 \rightarrow \$50 \div \$2 = 25$  uses
  - Half budget for big =  $\$50 \rightarrow \$50 \div \$10 = 5$  uses
- Answer: 25 small + 5 big uses**