LESSON MAKER PRO

Which Deal Wins?

Model costs, compare choices, and check your decision.

HIGH SCHOOL · MM.FPM.A.2

MM.FPM.A.2 "Use elements of the Mathematical Modeling Cycle to solve real-world problems involving finances."

NAME _____ DATE _____

MODEL THE TOTAL COST

For a plan with a starting fee and a monthly charge, use total cost = starting fee + monthly charge × number of months. Compare plans over the same number of months. Check that your answer fits the situation before choosing a plan.

WORKED EXAMPLE

A music plan costs $13 to start and $7 per month. Another plan has no starting fee and costs $11 per month. Which costs less for 4 months, and by how much?

1. First plan: $13 + $7 × 4 = $41.
2. Second plan: $11 × 4 = $44.
3. $44 - $41 = $3.

Answer: The first plan costs $3 less for 4 months.

PRACTICE 6 problems

1 A streaming plan has an $18 starting fee and costs $9 per month. What is the total cost for 6 months?

ANSWER _____

2 A gym charges $25 to join and $8 per month. What is the total cost for 10 months?

ANSWER _____

3 Plan A costs $12 per month. Plan B costs $15 to start and $9 per month. Which costs less for 8 months, and by how much?

ANSWER _____

4 For equipment rentals, Plan A costs $20 to join and $5 per rental. Plan B costs $10 per rental with no joining fee. Which costs less for 6 rentals, and by how much?

ANSWER _____

5 You have $100 for a service that costs $16 to start and $12 per month. What is the greatest number of whole months you can pay for?

ANSWER _____

6 Plan A costs $30 to start and $6 per month. Plan B costs $12 per month with no starting fee. After how many months will their total costs be equal?

ANSWER _____

APPLY IT Show your work

1 You want a gaming subscription for 9 months. One option costs $24 to start and $8 per month. Another has no starting fee and costs $14 per month. Which option costs less over 9 months, and how much do you save?

WORK SPACE

ANSWER _____

2 You need an outfit for 2 school events. Buying one costs $28 plus $6 for alterations, and you can wear it to both events. Renting costs $12 per event. Which choice costs less for both events, and by how much?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A club offers Plan A for $42 to join plus $8 per event. Plan B costs $15 per event with no joining fee. Compare the costs for 6 events and for 8 events. What is the first whole number of events for which Plan A costs less? State one assumption your model makes.

WORK SPACE AND ANSWER

Which Deal Wins?

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A streaming plan has an $18 starting fee and costs $9 per month. What is the total cost for 6 months?	**$72**
2	A gym charges $25 to join and $8 per month. What is the total cost for 10 months?	**$105**
3	Plan A costs $12 per month. Plan B costs $15 to start and $9 per month. Which costs less for 8 months, and by how much?	**Plan B costs $9 less.**
4	For equipment rentals, Plan A costs $20 to join and $5 per rental. Plan B costs $10 per rental with no joining fee. Which costs less for 6 rentals, and by how much?	**Plan A costs $10 less.**
5	You have $100 for a service that costs $16 to start and $12 per month. What is the greatest number of whole months you can pay for?	**7 months**
6	Plan A costs $30 to start and $6 per month. Plan B costs $12 per month with no starting fee. After how many months will their total costs be equal?	**5 months**

PART 2 · APPLY IT

1. **The option with the starting fee costs $30 less.** The totals are $24 + $8 × 9 = $96 and $14 × 9 = $126. The difference is $30.
2. **Renting costs $10 less.** Buying costs $28 + $6 = $34. Renting costs $12 × 2 = $24, which is $10 less.

CHALLENGE

At 6 events, both plans cost $90. At 8 events, Plan A costs $106 and Plan B costs $120. Plan A first costs less at 7 events. One assumption is that the per-event prices do not change.

Accept equivalent wording that identifies the cheaper choice and the exact savings. For the challenge, accept other reasonable assumptions, such as no additional fees.