Choosing and explaining a financial model

6 questions | 17 marks

Equivalent correct methods earn the corresponding marks.

1. An excursion has a 20-dollar booking fee and costs 5 dollars per person. Find the cost for 8 people. [2 marks]

$20 + 5 \times 8 = 60$ dollars.

Answer: 60 dollars

2. A game venue costs 10 dollars once plus 4 dollars per person. Find the total for 0, 1 and 2 people. [2 marks]

The fixed fee remains 10 dollars. Add 0, 4 or 8 dollars.

Answer: 10, 14 and 18 dollars.

3. A stall sells 10 items for 3 dollars each. Materials cost 1 dollar per item, plus a 15-dollar setup fee. Find the surplus. [3 marks]

$\text{Income} = 30$ dollars. $\text{Costs} = 10 + 15 = 25$ dollars.

$\text{Surplus} = 30 - 25 = 5$ dollars.

Answer: 5 dollars

4. A ticket model uses 7 dollars per person. Give two things that should be checked before using it to predict the cost of a school trip. [3 marks]

The model needs an appropriate per-person price and all fixed fees. Other reasonable cost or capacity assumptions are acceptable.

Answer: For example: whether all students pay 7 dollars; whether a booking or transport fee must be added.

5. Company A charges 40 dollars once plus 2 dollars per person. Company B charges 6 dollars per person with no fixed fee. Both can carry 12 people. Which is cheaper for 12 people? [3 marks]

A costs $40 + 2 \times 12 = 64$ dollars.

B costs $6 \times 12 = 72$ dollars.

Answer: A is cheaper by 8 dollars.

6. You have 80 dollars for kits. Delivery costs 18 dollars once and each kit costs 7.50 dollars. Find the largest number of whole kits you can buy and the money left. [4 marks]

After delivery, 62 dollars remains. Eight kits cost 60 dollars; nine cost 67.50 dollars.

$\text{Total for eight} = 18 + 60 = 78$ dollars; $80 - 78 = 2$ dollars.

Answer: 8 kits; 2 dollars left.