

Objective 63

Compare a linear function represented algebraically to a linear function represented in a table

PROBLEM

The table shows the price of concert tickets purchased online. The cost includes a ticket price of \$45 in addition to an order processing fee.

Tickets Purchased	3	4	5	6
Cost of Order (\$)	145	190	235	280

The function $P = 49t$ represents the cost in dollars of tickets when purchased at the door. P is the total cost of the tickets and t is the number of tickets purchased. Is it cheaper to buy 4 tickets online or at the door? If both options cost the same, state so.

STEP 1

Determine how to solve the problem.

The problem asks if it is cheaper to purchase 4 tickets online or at the door. Use the table to determine the cost of 4 tickets. Use the function to determine the cost of 4 tickets. Compare the costs.

STEP 2

Use the table to determine the cost of 4 tickets online.

Tickets Purchased	3	4	5	6
Cost of Order (\$)	145	190	235	280

The cost of purchasing 4 tickets online is \$190.

STEP 3

Use the function $P = 49t$ to determine the cost of 4 tickets at the door. Find P by substituting $t = 4$.

$$P = 49(4) = 196$$

The cost of purchasing 4 tickets at the door is \$196.

STEP 4

Compare the costs.

The cost of 4 tickets purchased online is \$190. The cost of purchasing 4 tickets at the door is \$196.

It is cheaper to buy 4 tickets online.

ANSWER

It is cheaper to buy 4 tickets online.

Guided Practice:

The table represents the total cost an online store charges for streaming movies. It charges an annual membership fee and a fee for each movie streamed.

Movies Streamed	0	1	2	3
Total Cost (\$)	58.00	60.90	63.80	66.70

A local rental store uses the function $C = 4.60m$ to determine how much to charge for movie rentals. C is the total cost and m is the number of movies rented. The store does not charge customers a membership fee. If 40 movies are rented in a year, which option is cheaper?

- [A] Streaming movies from the online store is less expensive for 40 movies in a year.
- [B] Renting DVDs from the neighborhood store is less expensive for 40 movies in a year.
- [C] Both options cost the same amount for 40 movies in a year.

Independent Practice:

The table represents the total cost an online store charges for streaming movies. It charges an annual membership fee and a fee for each movie streamed.

Movies Streamed	0	1	2	3
Total Cost (\$)	54.00	56.70	59.40	62.10

A local rental store uses the function $C = 4.60m$ to determine how much to charge for movie rentals. C is the total cost and m is the number of movies rented. The store does not charge customers a membership fee. If 25 movies are rented in a year, which option is cheaper? If both options cost the same, state so.

The table shows the price of concert tickets purchased online. The cost includes a ticket price of \$40 in addition to an order processing fee.

Tickets Purchased	2	3	4	5
Cost of Order (\$)	91	131	171	211

The function $P = 44t$ represents the cost of tickets in dollars when purchased at the door. P is the total cost of the tickets and t is the number of tickets purchased. Is it cheaper to buy 4 tickets online or at the door?

- [A] It is cheaper to buy 4 tickets online. [B] It is cheaper to buy 4 tickets at the door.
[C] Both options cost the same for 4 tickets.