

Objective 66

Compare a description of a linear function to a linear function represented in a table

PROBLEM

1 of 2

A female grizzly bear weighed 103 kg on July 1st. Her weight increased at a constant rate of 4 kg per week during the summer. A male grizzly bear's weight also increased at a constant rate during the summer. The table below shows his weight at various times. Which bear, if either, weighed more on July 1st?

Weeks since July 1 st	1	2	3	4
Male Grizzly Bear's Weight (kg)	104	107	110	113

STEP 1

Determine how to solve the problem.

The problem asks which bear weighed more on July 1st. Determine the weight of the female bear from the description. Determine the weight of the male bear using the table. Compare their weights.

STEP 2

Determine the weight of the female bear from the description.

The description says that the female bear weighed 103 kg on July 1st.

STEP 3

Determine how many kilograms the male bear gained each week.

Use the chart to find how much the male bear gained between week 1 and week 2. Subtract its weight in week 1 from its weight in week 2. Because the bear gained weight at a constant rate, the amount of change should be the same for each week. Check your answer by also finding the difference in weight between week 2 and 3 and between week 3 and 4.

$$107 \text{ kg} - 104 \text{ kg} = 3 \text{ kg}$$

$$110 \text{ kg} - 107 \text{ kg} = 3 \text{ kg}$$

$$113 \text{ kg} - 110 \text{ kg} = 3 \text{ kg}$$

The male bear gained 3 kg each week.

STEP 4

Determine the weight of the male bear on July 1st.

The table shows that the male bear weighed 104 kg 1 week after July 1st. The male bear gained 3 kg each week. Subtract 3 kg from 104 kg to find the male bear's weight on July 1st.

$$104 \text{ kg} - 3 \text{ kg} = 101 \text{ kg}$$

The male bear weighed 101 kg on July 1st.

STEP 5

Compare the weights of the bears.

Weight of female bear on July 1st: 103 kg

Weight of male bear on July 1st: 101 kg

The female bear weighed more than the male bear on July 1st.

ANSWER

The female bear weighed more.

Guided Practice:

1. Carpet King charges \$4 per square foot for a type of carpet. They charge an additional \$45 for installation. Eastside Carpet also charges an installation fee and a constant rate for the same carpet. The table shows the cost including installation for various amounts of the carpet at Eastside Carpet. Which store charges more per square foot for the carpet?

Square Feet of Carpet	656	657	658	659
Total Cost (\$) Eastside Carpet	3996	4002	4008	4014

- [A] Carpet King charges more per square foot.
[B] Eastside Carpet charges more per square foot.
[C] Both stores charge the same amount per square foot.

Independent Practice:

2. Carpet King charges \$6 per square foot for a type of carpet. They charge an additional \$90 for installation. Westside Carpet also charges an installation fee and a constant rate for the same carpet. The table shows the cost including installation for various amounts of the carpet at Westside Carpet. Which store, if either, charges more per square foot for the carpet?

Square Feet of Carpet	730	731	732	733
Total Cost (\$) Westside Carpet	3000	3004	3008	3012

3. A female grizzly bear weighed 102 kg on July 1st. Her weight increased at a constant rate of 6 kg per week during the summer. A male grizzly bear's weight also increased at a constant rate during the summer. The table below shows his weight at various times. Which bear weighed more on July 1st?

Weeks since July 1 st	2	3	4	5
Male Grizzly Bear's Weight (kg)	110	113	116	119

- [A] The female bear weighed more. [B] The male bear weighed more.
[C] Both bears weighed the same amount.