Feline Delights: Scatter Plots Performance Task

PERFORMANCE TASK 🗺

Feline Delights has a new type of cat treat that they want to sell in pet stores. To examine data on current cat treat sales, some of their employees research different brands of cat treats and create the scatter plots below.

Use complete sentences to describe the pattern shown in each scatter plot, making sure to name the type of association. If any scatter plot has an outlier, circle it. **Sample Answers**

Weight of Treat vs. Number per Bag

Number of treats per bag / Weight of individual treats (g)
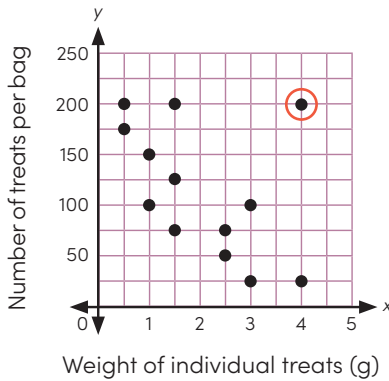
This scatter plot shows a negative association. The y-values tend to decrease as the x-values increase. There is one outlier, which is circled on the graph.

Weight of Bag vs. Price per Bag

Price per bag ($) / Weight of bag (g)
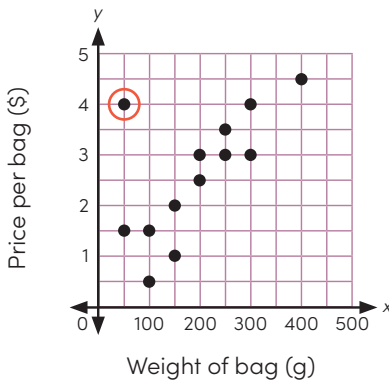
This scatter plot shows a positive association. The y-values tend to increase as the x-values increase. There is one outlier, which is circled on the graph.

Weight of Treat vs. Price per Bag

Price per bag ($) / Weight of individual treats (g)
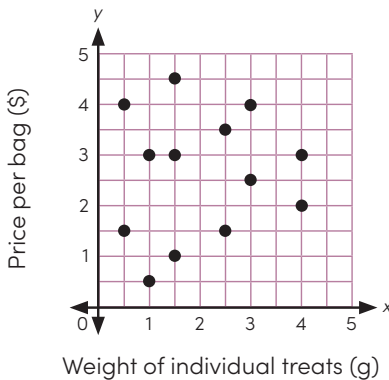
This scatter plot shows no association. There is no pattern between the y-values and x-values. There are no outliers.

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The employees at Feline Delights create more scatter plots, along with the lines of best fit, to help them make decisions on how to maximize future sales. Answer the questions below.

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1. Write an equation for the line of best fit in slope-intercept form.

$y = 5x$

Size of Store vs. Sales per Day

2. Identify the *y*-intercept of the line of best fit. What does it mean in this context?

Sample answer: The *y*-intercept is 0. This means you could expect a store of 0 square feet to sell 0 bags per day.
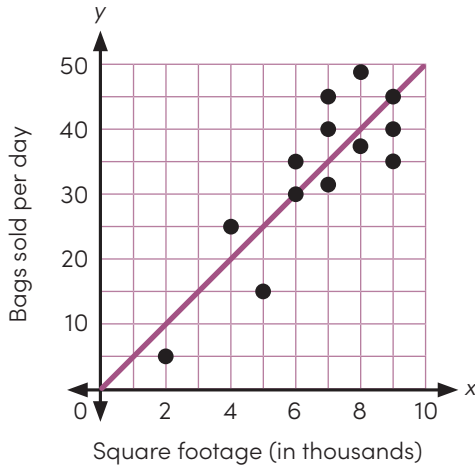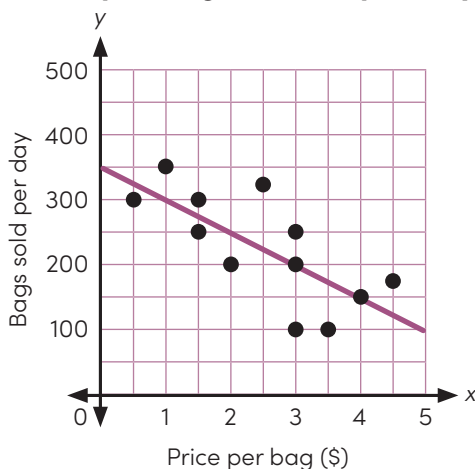
3. Use the line of best fit to determine the size of a store in which Feline Delights could expect to sell 20 bags per day.

4,000 square feet

4. How many bags of cat treats per day could Feline Delights expect to sell in an 11,000 square foot store?

55 bags

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1. Write an equation for the line of best fit in slope-intercept form.

$y = -50x + 350$

Price per Bag vs. Sales per Day

2. Identify the slope of the line of best fit. What does it mean in this context?

Sample answer: The slope is −50. This means for every $1.00 increase in price, you could expect Feline Delights to sell 50 fewer bags per day.

3. Use the line of best fit to determine the price at which Feline Delights could expect to sell 50 bags per day.

$6.00

4. How many bags could Feline Delights expect to sell per day if they price the cat treats at $1.50 per bag?

275 bags

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