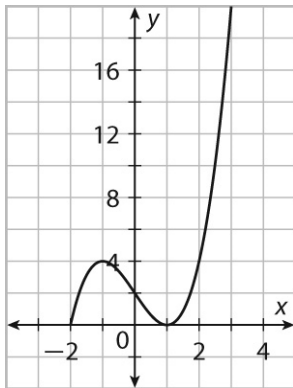


LESSON
1-2

Characteristics of Function Graphs

Practice and Problem Solving: A/B

Use the graph to answer Problems 1–4.



1. On which intervals is the function increasing and decreasing?

2. What are the local maximum and minimum values?

3. What are the zeros of the function?

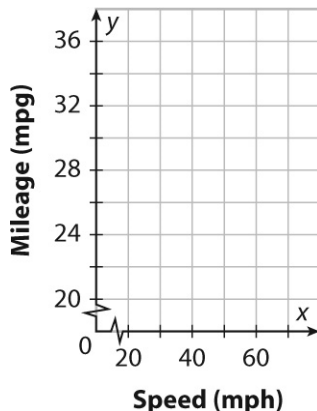
4. What is the domain and range?

Shelley is studying the relationship between her car’s mileage (miles per gallon) and speed (miles per hour). The table shows the data Shelley found. Use the table for Problems 5–7.

Speed (miles per hour)	30	40	50	60	70
Mileage (miles per gallon)	34.0	33.5	31.5	29.0	27.5

5. Make a scatter plot of the data. Then use a calculator to find an equation for the line of best fit. Sketch the line.
6. Use the equation found in Problem 5 to predict the miles per gallon of Shelly’s car for a speed of 55 miles per hour.

Equation of line: _____



7. Is the prediction found in Problem 6 an example of interpolation or extrapolation? Explain.

LESSON
1-2

Characteristics of Function Graphs

Practice and Problem Solving

The table shows values of a polynomial function. Use the table for Problems 8–9.

x	0	1	2	3
$f(x)$	20	15	12	41

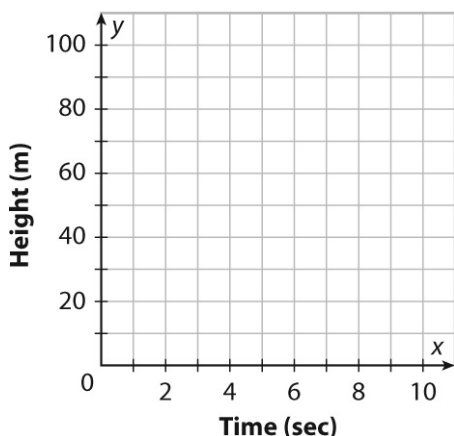
8. Over which intervals is the average rate of change positive? _____

9. Over which intervals is the average rate of change negative? _____

A fireworks projectile is launched at 20 meters per second from a 60-meter cliff. The table shows the height, y , in meters the projectile is above a field after x seconds. Use the table for Problems 10–14.

Time (seconds)	0	1	2	3	4	5
Height (meters)	60	75	80	75	60	35

10. Make a scatter plot of the data. Then sketch the function.
12. Over what interval is the projectile's height increasing? _____



13. Over what interval is the projectile's height decreasing? _____
14. What is the domain and range of the model?

11. What is the maximum height of the projectile? _____