

Name _____ Date _____ Class _____

LESSON **Practice B**
1-9 *Introduction to Parent Functions*

Identify the parent function for h from its function rule. Then graph h on your calculator and describe what transformation of the parent function it represents.

1. $h(x) = \sqrt{x+4}$

2. $h(x) = (x-4)^3$

3. $h(x) = 4x^2$

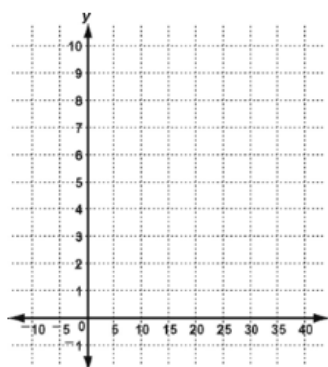
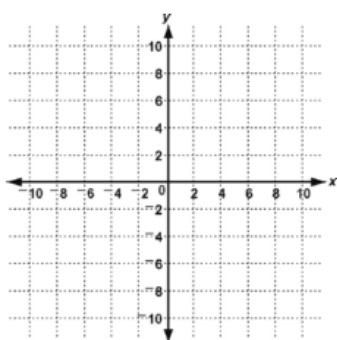
Graph the data from the table. Describe the parent function and the transformation that best approximates the data set.

4.

| | | | | | |
|-----|----|----|----|---|---|
| x | -2 | -1 | 0 | 1 | 2 |
| y | -9 | -2 | -1 | 0 | 7 |

5.

| | | | | | |
|-----|---|---|---|----|----|
| x | 0 | 2 | 8 | 18 | 32 |
| y | 0 | 1 | 2 | 3 | 4 |



6. Compare the domain and the range for the parent quadratic function to the domain and the range for the parent linear function.

7. Compare the domain and the range for the parent square-root function to the domain and the range for the parent cubic function.

Name _____ Date _____ Class _____

LESSON
2-7

Problem Solving

Curve Fitting with Linear Models

As a science project, Shelley is studying the relationship of car mileage (miles per gallon) and speed (miles per hour). The table shows the data Shelley gathered using her family's hybrid vehicle.

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

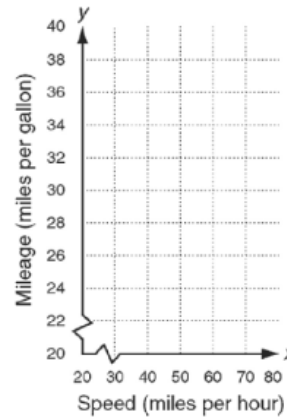
1. Make a scatter plot of the data. Identify the correlation.

2. Sketch a line of best fit on the graph.
3. Use two points on the line to find the slope.

4. Use the point-slope form to write an equation that models the data.

5. Use a graphing calculator to plot the data. Find the value of the correlation coefficient r .
6. What does the value of r tell you about the data?

7. What equation do you find with the calculator for the line of best fit?



Use the equation you wrote in Exercise 3. Choose the letter for the best answer.

- | | |
|--|---|
| 8. Predict the mileage for a speed of 55 miles per hour. | 9. Predict the speed if the mileage is 28 miles per gallon. |
| A 30 | A 32 |
| B 34 | B 35 |
| C 39 | C 67 |
| D 46 | D 75 |