Name _____   Date _____

Practice B

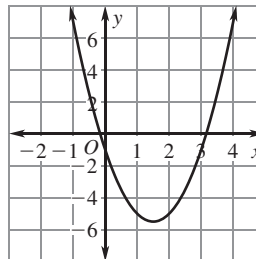*For use with the lesson "Modeling Relationships"*

1. Use the given information to decide which linear function is increasing more rapidly.

   - Linear Function 1: The function whose equation is $y = 4x - 3$.
   - The table shows the coordinates of five points found on the line representing Linear Function 2.

x	−4	−2	0	2	4
y	−11	−5	1	7	13

2. Use the given information to decide which quadratic function has the lesser minimum.

   - Quadratic Function 1: The function whose equation is $y = 2x^2 - 4x + 1$.
   - Quadratic Function 2: The function whose graph is shown.

In Exercises 3–6, choose an appropriate type of function to use to model the situation.

3. While roofing a house, Tydra drops her hammer. Model the height of the hammer as a function of the time before it hits the ground.

4. Maddie bought a rare painting for $200,000. Model the value of the painting as a function of time if the value increases by the same percent each month.

5. Toni's coin collection currently includes 20 coins. Beginning this month, she plans to add 3 coins to her collection each month. Model the number of coins in her collection as a function of time.

6. Hector bought a new car for $15,000. On average, the value of the car decreases by the same amount each month. Model the value of the car over time.

7. **Running** The table shows the distance in miles Renee ran during each 10-minute interval on her Saturday run. Indicate whether the number of miles she ran represents *growth, decay,* or *neither*. Identify the growth or decay rate, if it exists, expressing it as a percent.

Minutes	10	20	30	40
Miles	1.5	0.9	0.54	0.324

8. **Business** The profit in dollars Company A earned in the first four years of business can be modeled by the equation $y = -x^2 + 11$, where y represents profit in hundreds of thousands of dollars and x represents years, $0 < x < 4$. The profit in dollars Company B earned in the first four years of business are modeled by the graph. Which company earned the greatest profit in any one year?