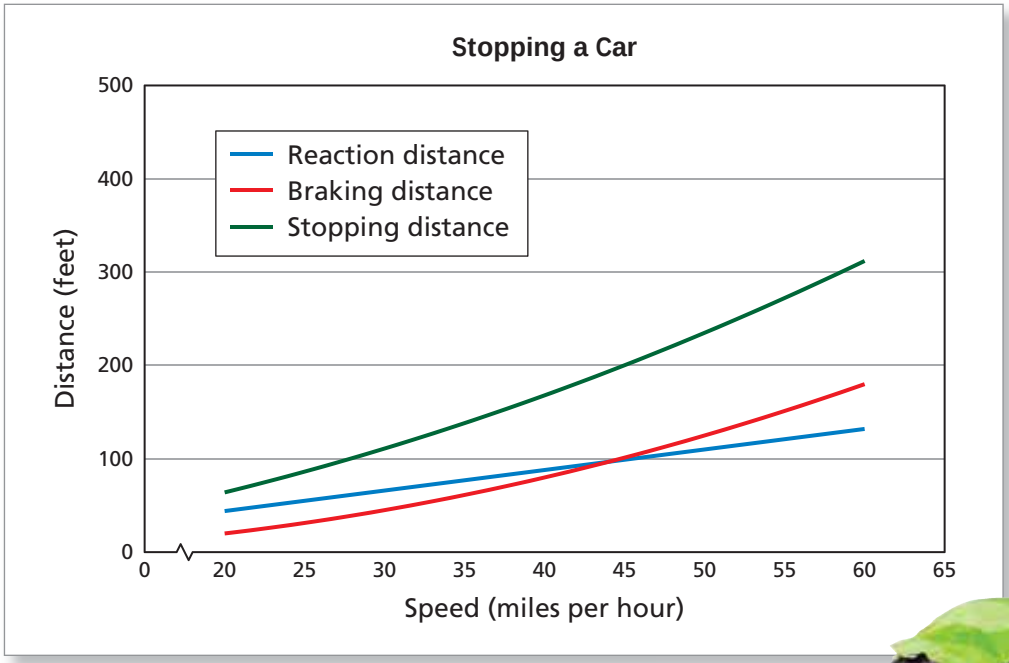
Stopping a Car **In Exercises 7–10, use the graph and the information below.** ***(See Example 3.)***

Assuming proper operation of the brakes on a vehicle, the minimum stopping distance is the sum of the reaction distance and the braking distance. The reaction distance is the distance the car travels *before* the brakes are applied. The braking distance is the distance a car travels *after* the brakes are applied but *before* the car stops. A reaction time of 1.5 seconds is used in the graph.



7. Does the graph of the stopping distance appear to be linear or quadratic? Explain your reasoning.

8. Does the graph of the reaction distance appear to be linear or quadratic? Explain your reasoning.

9. Use the graph to predict the stopping distance at 90 miles per hour.

10. The braking distance at 35 miles per hour is about 60 feet. Does this mean that the braking distance at 70 miles per hour is about 120 feet? Explain.

Slippery Road **The braking distance of a car depends on the friction between the tires and the road. The table shows the braking distance for a car on a slippery road at various speeds. In Exercises 11 and 12, use the table.** ***(See Example 4.)***

Speed (mph)	20	30	40	50	60	70	80
Distance (ft)	40	90	160	250	360	490	640

11. Is the pattern quadratic? Explain.

12. Graph the data in the table. Compare this graph to the graph above.