



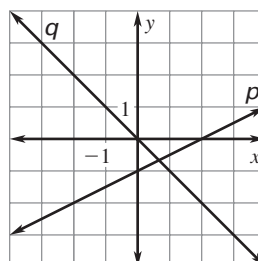
Objective 3 TEKS A.5.A Review

A.5.A Determine whether or not given situations can be represented by linear functions.

The graph of a **linear function** is a straight line. A linear function increases or decreases at a constant rate.

Line *p* shows a constant rate of increase.

Line *q* shows a constant rate of decrease.



EXAMPLE Is distance a linear function of time in each situation? Why or why not?

Situation	Response
Tina rides her bicycle at 12 miles per hour for several hours.	The distance Tina rides is a linear function of time. The distance Tina rides increases at a constant rate over time.
A flower pot falls from Judy's third-floor balcony.	The distance the pot falls is not a linear function of time. Because of gravity, the rate at which the pot falls increases over time.

YOU DO IT Is distance a linear function of time in each situation? Why or why not?

- A ball is rolled up a ramp until it stops and then rolls back down.
 - The **distance** the ball rolls is not a linear function of time.
 - Because of gravity, the rate at which the ball rolls **decreases** as the ball rolls up the ramp and then **increases** as the ball rolls back down the ramp.
- The table shows the relationship between the time *t* that a flock of geese flies and the distance *d* it travels.

Time in flight, <i>t</i>	Distance traveled, <i>d</i>
2 hours	80 miles
3 hours	120 miles
4 hours	160 miles
5 hours	200 miles

- How many miles does the flock fly in one hour? **40 miles**
- The **distance the flock flies** is a linear function of **time** because the distance the flock of geese flies increases at a **constant rate** over time.