

READY, SET, GO!

Name

Period

Date

READY

Topic: Comparing rates of change in linear situations.

State which situation has the greatest rate of change

- The amount of stretch in a short bungee cord stretches 6 inches when stretched by a 3 pound weight. A slinky stretches 3 feet when stretched by a 1 pound weight.

Bungee $\frac{6 \text{ in}}{3 \text{ lb}} = \frac{2 \text{ in}}{1 \text{ lb}}$

Slinky $\frac{3 \text{ ft}}{1 \text{ lb}} = \frac{36 \text{ in}}{1 \text{ lb}}$

- A sunflower that grows 2 inches every day or an amaryllis that grows 18 inches in one week.

- Pumping 25 gallons of gas into a truck in 3 minutes or filling a bathtub with 40 gallons of water in 5 minutes.

Truck $\frac{25 \text{ gal}}{3 \text{ min}} = \frac{125 \text{ gal}}{15 \text{ min}}$

Tub $\frac{40 \text{ gal}}{5 \text{ min}} = \frac{120 \text{ gal}}{15 \text{ min}}$

- Riding a bike 10 miles in 1 hour or jogging 3 miles in 24 minutes.

SET

Topic: Discrete and continuous relationships

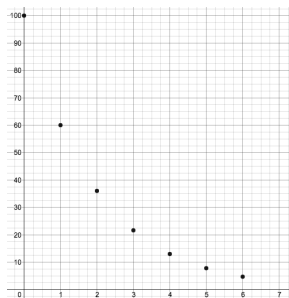
Identify whether the following items best fit with a *discrete* or a *continuous* model. Then determine whether it is a *linear (arithmetic)* or *exponential (geometric)* relationship that is being described.

- The freeway construction crew pours 300 ft of concrete in a day. *Continuous, Linear*
- For every hour that passes, the amount of area infected by the bacteria doubles.
- To meet the demands placed on them the brick layers have started laying 5% more bricks each day.
- The average person takes 10,000 steps in a day.
- The city of Buenos Aires has been adding 8% to its population every year. *Continuous, Exponential*
- At the headwaters of the Mississippi River the water flows at a surface rate of 1.2 miles per hour.

11. a. $f(n) = f(n - 1) + 3; f(1) = 5$

Discrete, Linear

b.



c. $g(x) = 2^x(7)$

GO

Topic: Solving one-step equations

Solve the following equations. Remember that what you do to one side of the equation must also be done to the other side. (Show your work, even if you can do these in your head.)

Example: Solve for x . $1x + 7 = 23$ Add -7 to both sides of the equation.

$$\begin{array}{r} 1x + 7 = 23 \\ -7 = -7 \\ \hline 1x + 0 = 16 \\ \text{Therefore } 1x = 16 \end{array}$$

Example: Solve for x . $9x = 63$ Multiply both sides of the equation by $\frac{1}{9}$.

$$\begin{array}{r} 9x = 63 \\ \left(\frac{1}{9}\right) 9x = \left(\frac{1}{9}\right) 63 \\ \left(\frac{9}{9}\right) x = \frac{63}{9} \\ 1x = 7 \end{array}$$

Note that multiplying by $\frac{1}{9}$ gives the same result as dividing everything by 9.

11. $1x + 16 = 36$

12. $1x - 13 = 10$

13. $1x - 8 = -3$
 $\quad \quad \quad \downarrow +8$
 $\quad \quad \quad \hline x = 5$

14. $\frac{1}{8}x = 56$ $\left(\frac{1}{8}\right)$
 $x = 7$

15. $-11x = 88$

16. $425x = 850$

17. $\frac{1}{6}x = 10$

18. $\left(\frac{-7}{4}\right) \cdot \frac{4}{7}x = -1$ $\left(\frac{-7}{4}\right)$
 $x = \frac{7}{4}$

19. $\frac{3}{4}x = -9$