

READY, SET, GO!

Name

Period

Date

### READY

Topic: Comparing rates of change in linear situations.

**State which situation has the greatest rate of change**

1. 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.
2. A sunflower that grows 2 inches every day or an amaryllis that grows 18 inches in one week.
3. Pumping 25 gallons of gas into a truck in 3 minutes or filling a bathtub with 40 gallons of water in 5 minutes.
4. Riding a bike 10 miles in 1 hour or jogging 3 miles in 24 minutes.

### SET

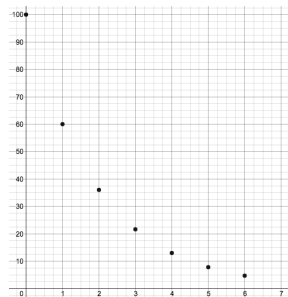
Topic: Discrete and continuous relationships

**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.**

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

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

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.  $1x - 8 = -3$

14.  $8x = 56$

15.  $-11x = 88$

16.  $425x = 850$

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

18.  $-\frac{4}{7}x = -1$

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