SECONDARY MATH I // MODULE 2

LINEAR & EXPONENTIAL FUNCTIONS – 2.2

2.2

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.

    Slinky

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

    Amaryllis

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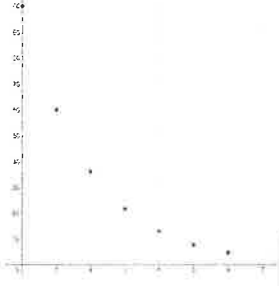
    25 gallons in 3 minutes

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

    Riding a bike

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. *Continuous, linear*

6. For every hour that passes, the amount of area infected by the bacteria doubles. *Continuous, exponential*

7. To meet the demands placed on them the brick layers have started laying 5% more bricks each day. *Discrete, Geometric*

8. The average person takes 10,000 steps in a day. *Discrete, arithmetic*

9. The city of Buenos Aires has been adding 8% to its population every year. *Discrete, geometric*

10. At the headwaters of the Mississippi River the water flows at a surface rate of 1.2 miles per hour. *Continuous, linear*

11. a. $f(n) = f(n-1) + 3; f(1) = 5$ b.   c. $g(x) = 2^x(7)$

    Discrete, linear   *Continuous, exponential*

    Discrete, geometric

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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.*

$$1x + 7 = 23$$
$$\underline{-7 = -7}$$
$$1x + 0 = 16$$
$$Therefore\ 1x = 16$$

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

$$9x = 63$$
$$\left(\frac{1}{9}\right)9x = \left(\frac{1}{9}\right)63$$
$$\left(\frac{9}{9}\right)x = \frac{63}{9}$$
$$1x = 7$$

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

11. $1x + 16 = 36$

$X = 20$

12. $1x - 13 = 10$

$X = 23$

13. $1x - 8 = -3$

$X = 5$

14. $8x = 56$

$X = 7$

15. $-11x = 88$

$X = -8$

16. $425x = 850$

$X = 2$

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

$X = 60$

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

$X = \frac{7}{4}$

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

$X = -12$