Coordinate Algebra Big 20 (#5)

Circle your final answer.

Monday (9/10/18)

1. Identify the scenario as either linear or exponential. Then, define your variable and write an expression to represent it.

   Ms. Williams has 1 cat. Her dream is to be a crazy cat lady. So she decides to double the amount of cats she has every year. (Assume her cats are magical and never die).

2. Identify the scenario as either linear or exponential. Then, define your variable and write an expression to represent it.

Rod is paid an overtime rate of $25 per hour after his basic wage of $600.

3. Identify the scenario as either linear or exponential. Then, define your variable and write an expression to represent it.

   An airplane 30,000 feet above the ground begins descending at the rate of 2000 feet per minute.

4. Identify the scenario as either linear or exponential. Then, define your variable and write an expression to represent it.

Your new computer cost $1500 but it depreciates in value by about 18% each year

5. Draw the graph of a linear growth expression, linear decay expression, exponential growth expression, and exponential decay expression.

   Linear Growth Linear Decay Exponential Growth Exponential Decay

Tuesday (9/11/18)

6. Two less than 2 times a number is the same as the number plus 64. What is the number?

7. A chef can make 12 omelets in one hour. What is the rate of omelets per minute?

8. Write an expression to represent the following:

Timmy's Taxis charges $1 for the first mile plus $0.35 per mile for every mile after the first mile.

9. Define a variable and write an expression to model the following situation:

Jasmine purchased a laptop worth $1,500 in 2007. It loses its value by 32% each year. What is the value of the laptop now?

10. Amy can drink 4 cups of milk in 15 minutes. What is this in ounces per hour?

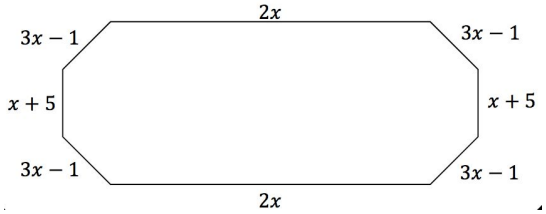
Wednesday (9/12/18)

11. In the following expression, what are the factors? ALso, how many terms are there?

4x + 3z - 20t + 1009

Factors: **Number of terms:**

12. Write an expression for the perimeter of the figure below (In simplest form.)



13.Define a variable and write an expression to model the following situation. Then, answer the questions below.

Suppose you receive $100 for a graduation present, and you deposit it in a savings account. Then each week thereafter, you add $5 to the account but no interest is earned.

Expression: _____

How many terms does this expression have? _____

What are the factors? _____

14. Define a variable and write an equation to model the following situation. Then, answer the questions below.

A computer valued at $6500 depreciates at the rate of 14.3% per year.

Expression: _____

How many terms does this expression have? _____

What are the factors? _____

15. Solve for the variable:

$$-12p + 39 = 11(p + 14)$$

Thursday (9/13/18)

16. Fill in the chart for the following expression:

$$4x^3 - 4x^2 + x + 3$$

# of Terms	Coefficients	Constants

17. Define a variable and write an expression to model the following situation:

A certain illness is spreading at a rate of 10% per hour. 3 people are initially exposed.

18. Define a variable and write an expression to model the following situation:

My nephew likes to rip up pieces of paper. Suppose he got his hands on a pile of 20 quiz papers. They rip all the quizzes in half, so now they have 40 pieces of paper (So his papers *DOUBLE*). Then they rip all the pieces in half again, and so on.

19. A tortoise can travel 10 cm per second. What is the tortoise's speed in feet per hour?

20. Sam deposited $750 into his bank account. He pays $35 per month for his smartphone. Write an expression that represents the amount of money in Sam's bank account after x months.