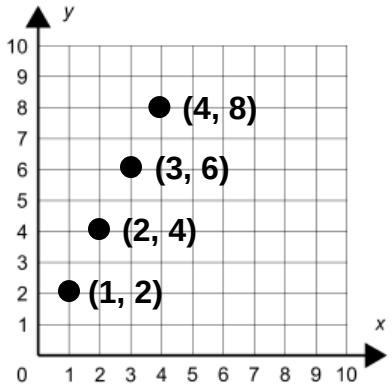
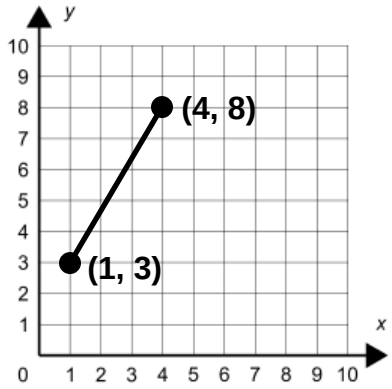
Name_____

ANALYZING FUNCTIONAL RELATIONSHIPS – Day 1

BELL WORK

1. Solve $8y - 2(y - 3) = 18$	2. Solve $2(t + 2) - 3t = -1$

The domain and range of a function can be ***discrete*** or ***continuous***. Consider the domain of two different functions:

Function 1	**Function 2**
	
Domain: {1, 2, 3, 4}	Domain: $1 \leq x \leq 4$
The domain is ***discrete*** because it consists of *only* the numbers 1, 2, 3, and 4.	The domain is ***continuous*** because it consists of *all* numbers from 1 to 4 on a number line.

EXAMPLE 1: On average, Jay can ride his bike 12 miles in one hour. The function $m = 12h$ represents the number of miles, m, he can ride in h hours.

1. Input variable: _____ Output variable: _____
2. How many miles can Jay ride in 3 hours? _____
3. How long does it take Jay to ride 18 miles? _____

4. After work, Jay only has 4 hours to ride his bike before it gets dark. What domain and range are reasonable for this situation?

   D: _____ R: _____

5. *Circle one:* The domain is discrete / continuous.

EXAMPLE 2: The total cost in dollars to buy uniforms for the players on a volleyball team can be found using the function $c = 34.95u + 6.25$, where u is the number of uniforms bought.

1. What is the total cost of buying 10 uniforms? _____

2. How many uniforms can be purchased with $400? _____

3. *Circle one:* The domain is discrete / continuous.

4. _____ If there are at least 8 players but not more than 12 players on the volleyball team, what is the domain of the function for this situation?

   A. $0 < u \leq 12$
   B. $0 < c \leq 425.65$
   C. {8, 9, 10, 11, 12}
   D. {285.85, 320.80, 355.75, 390.70, 425.65}

EXAMPLE 3: Katie goes to a flower shop to order flowers for her friend's birthday. The total cost of the flowers, T, can be found using the equation T = 0.60L + 7.50, where L represents the number of lilies used in the arrangement.

1. What is the total cost for 10 lilies? _____

2. Katie wants to include at least 10 lilies in the arrangement, but only has $15 to spend. What is the range for this situation?

   Range: _____

   What is the maximum value of the domain for this situation? _____

3. *Circle one:* The domain is discrete / continuous.