**NAME**_____**DATE**_____**PER.**_____

# ANALYZING FUNCTIONAL RELATIONSHIPS – Day 1

**Determine the domain and range each function. Is the domain discrete or continuous?**

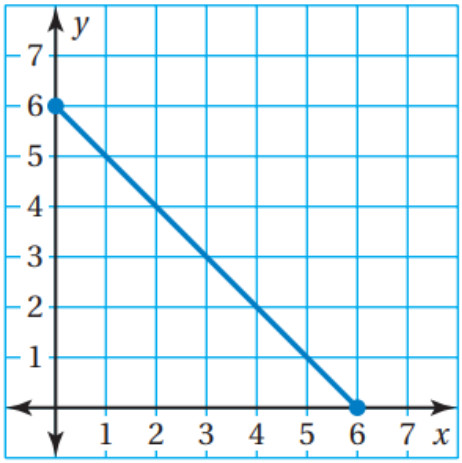
1.

*Circle One:*

Discrete

or

Continuous




Domain: _____

Range: _____

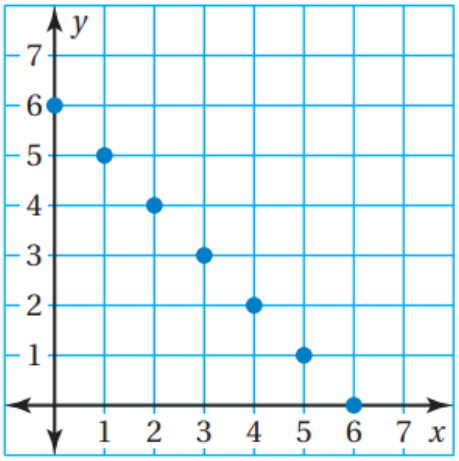
2.

*Circle One:*

Discrete

or

Continuous




Domain: _____

Range: _____

**Answer the following for each functional relationship.**

**Your cell phone currently has 45% of battery life remaining. Your charger charges at a rate of 2.5% every minute. The function $b = 45 + 2.5m$ can be used to find $b$, the battery life after $m$ minutes.**

3. What percent of the battery is charged after 10 minutes? _____

4. How long will it take the battery to reach 100% charge? _____

5. What is the domain and range of this situation?

   D: _____ R:_____

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

**Chris has $50 to spend on DVDs that cost $9 each. The function $m = 50 – 9d$ represents the amount of money $m$ (in dollars) he has after buying $d$ DVDs.**

7. How much money does Chris have after buying 3 DVDs? _____

8. If Chris has $14 remaining, how many DVDs did he buy? _____

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

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

**A large tank that begins with 23 gallons of water is filling at a rate of 2.5 gallons per minute. The function $g = 23 + 2.5m$ can be used to find $g$, the number of gallons of water in the tank after $m$ minutes.**

11. How many gallons of water are in the tank after one hour? _____

12. If the tank has a capacity of 200 gallons, what is the domain of the function for this situation?

    Domain: _____

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

**Solve.**

14. $4 - 2(x - 7) = 10$

15. $3(x - 4) - 7x > 20$

**Simplify.**

16. $\frac{14x^{-3}y^{-2}z^{5}}{2x^{6}y^{-5}z^{2}}$

17. $\frac{(7x^{7})(x^{3}y^{2})}{14x^{4}y^{9}}$