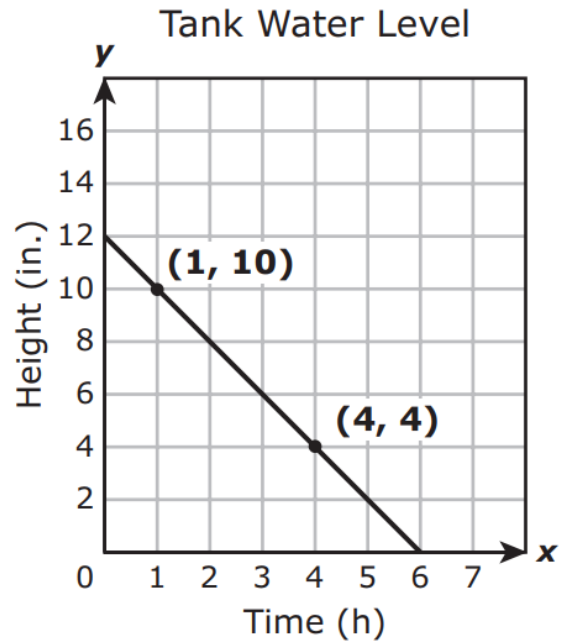


**APPLICATIONS OF PARAMETER CHANGES**

Jake's turtle tank needs to be cleaned. He decides to drain the tank at a constant rate represented by the graph below.



1. What is the rate of change for this situation?  
What does it represent?

2. What is the y-intercept of this situation?  
What does it represent?

3. What is the x-intercept of this situation?  
What does it represent?

4. Write the equation to represent the height,  $h$ , in terms of time,  $t$ .

5. If the rate at which the tank is drained is changed to 3 inches per hour and the initial water level stays the same, what would be the new equation?

6. If the tank had started with 16 inches of water and continued to drain at the same rate, how would the time it takes to empty the tank be affected?

- |                                |                                  |
|--------------------------------|----------------------------------|
| A. It would take 2 fewer hours | C. It would take 4 more hours    |
| B. It would take 2 more hours  | D. It would take 1.5 fewer hours |

7. *Circle one:* The domain of this function is discrete / continuous.

8. What is the domain and range of this relationship? D: \_\_\_\_\_

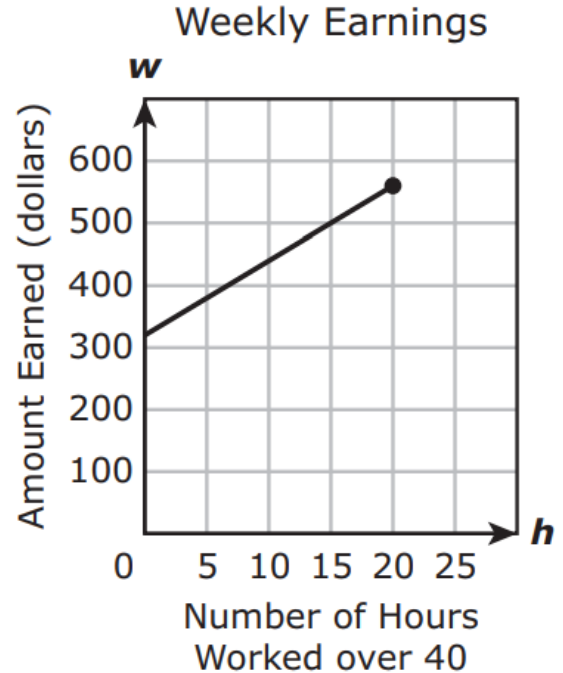
R: \_\_\_\_\_

**A lifeguard earns \$320 per week for working 40 hours plus \$12 per hour worked over 40 hours. The graph represents her weekly earnings for working  $h$  hours over 40.**

9. What is the rate of change for this situation?  
What does it represent?

10. What is the y-intercept of this situation?  
What does it represent?

11. Write an equation that can be used to find the weekly earnings,  $w$ , for working  $h$  hours over 40.



12. On one week, the lifeguard works a minimum of 40 hours a maximum of 60 hours. What domain and range are reasonable for this situation?

D: \_\_\_\_\_ R: \_\_\_\_\_

13. If the amount for working 40 hours is increased by \$50 and the amount earned for every hour over 40 stays the same...

a) What would be the new equation?

b) How would this change affect the graph?

14. If the lifeguard still earns \$320 per week for working 40 hours, but the amount earned for every hour over 40 decreases to \$10...

a) What would be the new equation?

b) How would this change affect the graph?