Taking a Closer Look!

Name____**ANSWERS**_____

Directions: Determine the stated characteristics for this graph. Carefully draw the graph on the grid below.

Graph:

$$y = 2x + 2$$

1. Is it a function? Yes

2. Slope: $m = 2/1 = 2$

3. Domain: All Reals

4. Range: All Reals

5. x-intercept(s): (-1,0)

6. y-intercept(s): (0,2)

7. Where is the graph increasing?

   The entire domain.

8. Where is the graph decreasing?

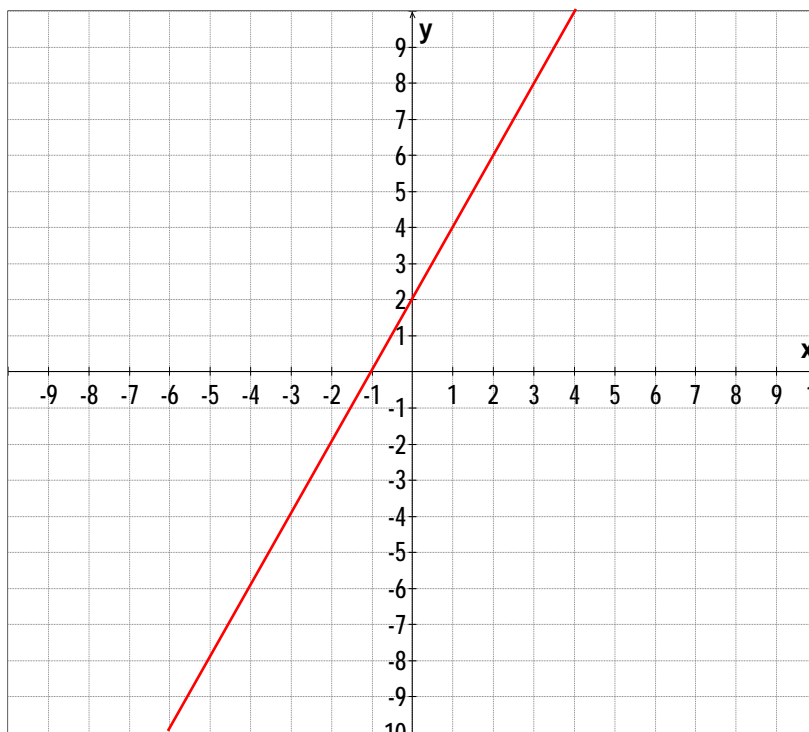   The graph does not decrease.

9. Where is the graph positive $(y > 0)$?

   For all x greater than -1.

10. Where is the graph negative $(y < 0)$?

   For all x less than -1.

11. Where is $y = 0$? At $x = -1$.

12. Find y when $x = 6$. $y = 14$

13. For what x-value(s) is $y = $ -4 ? $x = -3$

14. Maximum value of graph: none
  (absolute maximum) tends to + infinity

15. Minimum value of graph: none
  (absolute minimum) tends to - infinity

16. Rate of change on [-4,6]. $\dfrac{-6-14}{-4-6}=2$

17. Rate of change on [2,8]. $\dfrac{6-18}{2-8}=2$

Assuming $y = f(x)$:
18. As $x \to \infty, f(x) \to$ __∞__ .
   As $x \to -\infty, f(x) \to$ __$-\infty$__ .

19. Name given to this function. Linear