WS 4-4 – Questions

Sketch the graphs of functions with the following characteristics. Use WS 4-4 to complete the graphs.

7. The graph is linear with an x-intercept at -2. The graph is positive for $x < -2$, and negative for $x > -2$.

8. A non-linear graph has x-intercepts at -2 and 2 and a y-intercept at -4. The graph has a relative minimum of -4 at $x = 0$. The graph is decreasing for $x < 0$ and increasing for $x > 0$.

9. A non-linear graph has a y-intercept at 2, but no x-intercepts. The graph is positive and increasing for all values of x.

10. A non-linear graph has x-intercepts at -8 and -2 and a y-intercept at 3. The graph has relative minimums at $x = -6$ and $x = 6$ and a relative maximum at $x = 2$. The graph is positive for $x < -8$ and $x > -2$ and negative between $x = -8$ and $x = -2$. As x decreases, y increases and as x increases, y increases.

Use the space provided on WS 4-4 to complete the remaining questions.

11. Katara thinks that all linear functions have exactly one x-intercept. Desmond thinks that a linear function can have at most one x-intercept. Is either of them correct? Explain your reasoning.

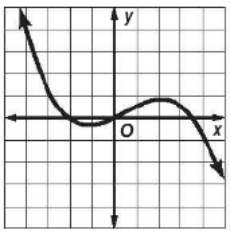
12. Describe the end behavior of the graph shown.

13. Determine whether the following statement is true or false. Explain your reasoning.

Functions have at most one y-intercept.

14. Sketch the graph of a function with one relative maximum and one relative minimum that could represent a real-world function. Label each axis and include appropriate units. Then identify and interpret the relative extrema of your graph.

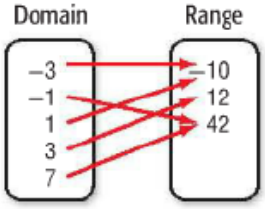
15. Describe the end behavior of the graph shown.



16. Simplify the expression $5d(7-3) - 16d + 3 \cdot 2d$

Determine if the relation shown is a function.

17.

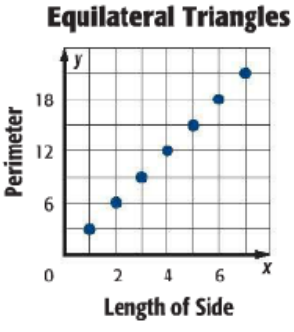


18. $\{(0,2),(3,5),(0,-1),(-2,4)\}$

19.

x	y
17	6
18	6
19	5
20	4

20. Express the relation in the graph as a set of ordered pairs. Then, describe the domain and the range.



Use the distributive property to rewrite each expression.

21. $\frac{1}{2}d(2d+6)$

22. $-h(6h-1)$

23. $3z - 6x$