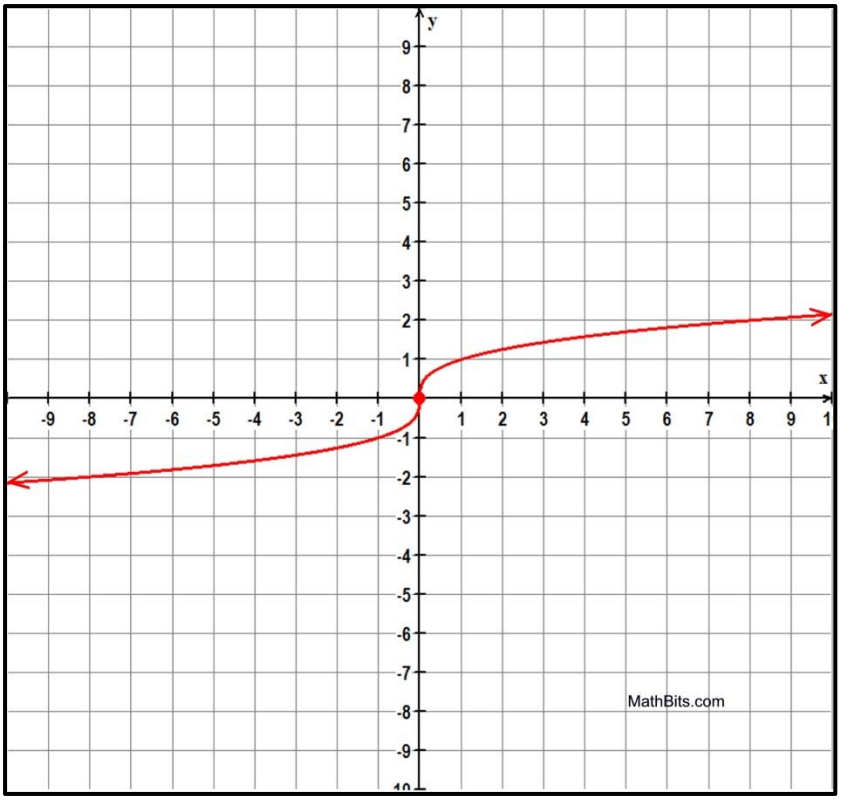
Taking a Closer Look!

Name ANSWERS

Directions: Give answers about the graph in interval notation when possible.

Graph:

$$y = \sqrt[3]{x}$$



1. Is it a function? Yes
   -passes vertical line test
2. Domain: $(-\infty, \infty)$
3. Range: $(-\infty, \infty)$
4. x-intercept(s): $x = 0$ at (0,0)
5. y-intercept(s): $y = 0$ at (0,0)
6. Symmetry: symmetric in origin
   (odd function)
7. Where is the graph increasing?
   everywhere – entire domain
8. Where is the graph decreasing?
   never decreases
9. Where is $y < 0$? $(-\infty, 0)$
10. Where is $y > 0$? $(0, \infty)$
11. Where is $y = 0$? Point: (0,0)
12. Find y when $x = 8$. $y = 2$
13. For what x-value(s) is $y = 27$? $x = 3$
14. Maximum value of graph: no max.
    (absolute maximum) approaches ∞
15. Minimum value of graph: no min.
    (absolute minimum) approaches ∞
16. Asymptotes: (state equation(s)) none

Assuming $y = f(x)$,

17. As $x \to +\infty$, $f(x) \to$ _∞_____
18. As $x \to -\infty$, $f(x) \to$ _-∞_____
19. Name given to this graph:
    cube root function