Pre-Calculus Name: Date: Period:

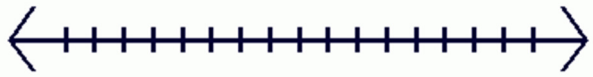
Pre-Calculus Unit 1 Part #1 Practice Test

- ✓ Learning Target 1A—I can describe a set of numbers in a variety of ways.
- ✓ Learning Target 1B—I can identify functions from data tables, graphs, and descriptions of set relations.
- ✓ Learning Target 1C—I can identify increasing and decreasing functions and intervals.

For each of the following, fill in the missing type of interval or graph. Describe the interval.

1. Interval _____

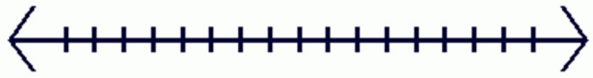
Inequality $3 < x \leq 7$

Graph 

Description _____

2. Interval $(3, \infty)$

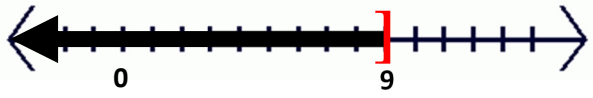
Inequality _____

Graph 

Description _____

3. Interval _____

Inequality _____

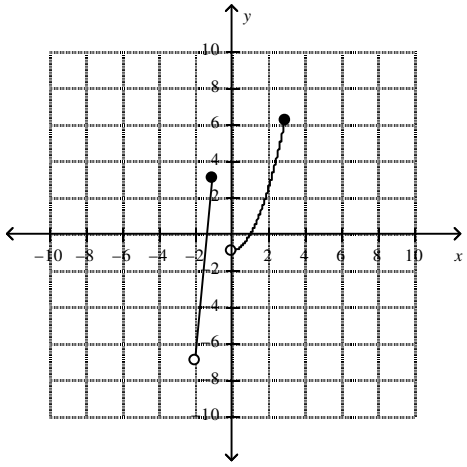
Graph 

Description _____

4. Describe the set of numbers using interval notation.

$x \geq 5$ or $x < 11$

5. Use the graph below to find the domain and range.



6. For which interval(s) is the function $y = 2x^3 - 8x + 5$ increasing and decreasing?

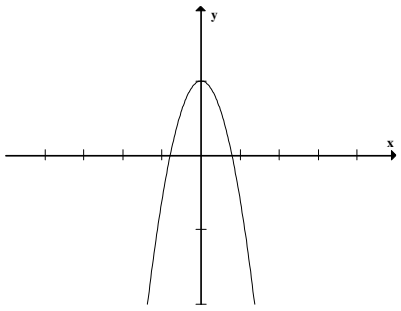
7. Find the minimum(s) and maximum(s) for $f(x) = -3x^3 + 8x^2 + 10x - 9$?

8. Describe the end behavior of the graph of $g(x) = 4x^5 - 3x$.

9. Describe the set of numbers using set-builder notation.

$\{-9, -8, -7, -6, -5, \ldots\}$

10. Does the graph below represent a function? Explain.



11. Find the domain and range of the relation $\{(-2,4),(3,5),(4,-2),(3,8)\}$.

12. Describe the domain and range of $y=\sqrt{x+3}$ in interval notation.

13. What are the types of discontinuity?

14. Graph the function $y=x^4+2x^3+3x$ on your calculator. Find the x-value of any extrema to the nearest hundredth and describe what type of extrema it is.

15. Write an expression in interval notation that describes the following:
"The cost of pizza varies from \$5 to \$15.

16. Describe the continuity, domain, range, increasing, decreasing, maximums, minimums, and end behavior for the function $y=\frac{x^2}{2-x^2}$. Also sketch a picture of the graph.