Name: _____

1.3.D2 – REPRESENTATIONS OF FUNCTIONS

Past due on: _____ Period: _____

For each graph, determine whether it represents...

- An increasing function, a decreasing function, a constant function, or a combination of increasing and decreasing functions.
- A function with an absolute minimum, an absolute maximum, or neither.
- A linear function, a quadratic function, an exponential function, a linear absolute value function, or a linear piecewise function.
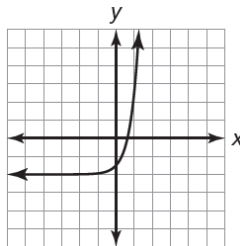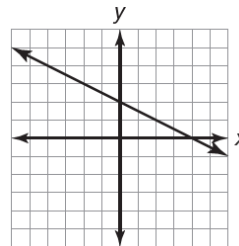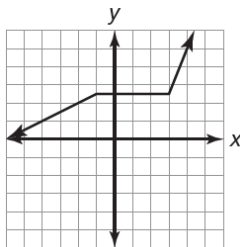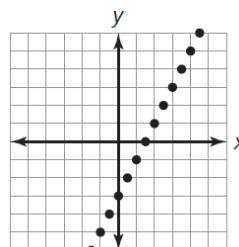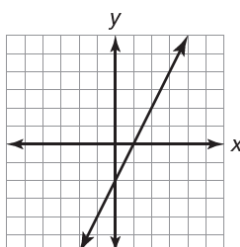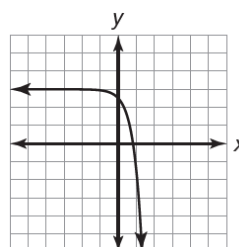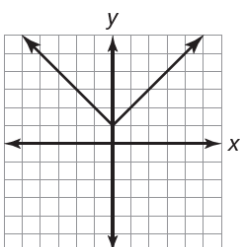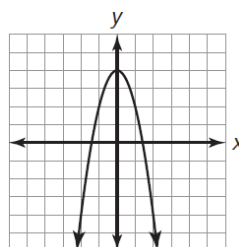
1.
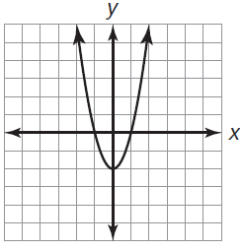
2.
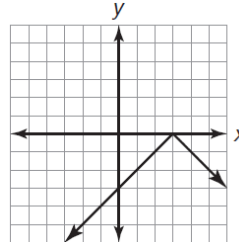
3.

4.

5.

6.

7.

8.

9.

10.

Classify each function as a linear function, a quadratic function, an exponential function, or a linear absolute value function. *If necessary, refer to the 1.3 example "Distinguishing between Function Families" in the chapter summary.*

11. $f(x) = 3x$

12. $f(x) = -2^x$

13. $f(x) = 8(x-2)^2$

14. $f(x) = 3x^2$

15. $f(x) = -4|x|$

16. $f(x) = 2x + 5$

17. $f(x) = 5^x - 1$

18. $f(x) = |x-2|$

19. $f(x) = 0.9^x$

20. $-(x+5)^2 - 8$

21. $f(x) = -3x + 5$

22. $f(x) = 2|x+1| - 1$

Choose the term from the box that best completes each statement.

FUNCTION NOTATION	INCREASING FUNCTION	EXPONENTIAL FUNCTIONS
FUNCTION FAMILY	LINEAR FUNCTIONS	LINEAR ABSOLUTE VALUE FUNCTIONS
ABSOLUTE MAXIMUM	QUADRATIC FUNCTIONS	CONSTANT FUNCTION
LINEAR PIECEWISE FUNCTIONS	DECREASING FUNCTION	ABSOLUTE MINIMUM

23. _____ is a way to represent equations algebraically that makes it more efficient to recognize the independent and dependent variables.

24. The family of _____ includes functions of the form $f(x) = a \cdot b^x$.

25. The family of _____ includes functions that have an equation that changes for different parts, or pieces, of the domain.

26. When both the independent and dependent variables of a function increase across the entire domain, the function is called an _____.

27. A function has a _____ if there is a point on its graph that has a y-coordinate that is greater than the y-coordinate of every other point on the graph.

28. A _____ if a group of functions that share certain characteristics.

29. The family of _____ includes functions of the form $f(x) = a|x + b| + c$.

30. When the dependent variable of a function decreases as the independent variable increases across the entire domain, the function is called a _____.

31. The family of _____ includes functions of the form $f(x) = ax^2 + bx + c$.

32. The family of _____ includes functions of the form $f(x) = ax + b$.

33. If the dependent variable of a function does not change over the entire domain, then the function is called a _____.

34. A function has an _____ if there is a point on its graph that has a y-coordinate that is less than the y-coordinate of every other point on the graph.