Name: Key Algebra II Pre-AP/GT Date: _____ Period: _____

Sometimes True, Always True, Never True

1. An equation in two variables has an infinite number of solutions. (y-values) sometimes
   solutions as ordered pairs → Always.
2. A rectangular coordinate system has two real number axes. always
3. In the graph of an ordered pair, the first number is the *y*-coordinate and the second number is the *x*-coordinate. never
4. The solution of an equation with two variables is an ordered pair.
5. The point (–2, – 4) is in the fourth (III) quadrant. never
6. In quadrant III, the second coordinate of a point is negative. always
7. A set of ordered pairs is called a function. sometimes
8. A function is a relation. always
9. The domain of a function is the set of real numbers. sometimes
10. Zero is excluded from the domain of a function. sometimes
11. f(*a*) represents a value in the range of a function when *a* is a value in the domain of the function. always
12. Two ordered pairs of a function can have the same first coordinate. never
13. The graph of $y = 1/x + 2$ is the graph of a linear function. never
14. The graph of $y - 3 = 0$ is a vertical line. never
    $y = 3$ horizontal
15. The graph of a straight line crosses the *x*-axis when $y = 0$. always
16. The graph of a linear equation is a straight line. always
17. The point at which a line crosses the *y*-axis is the *x*-intercept. never
    y-int
18. $xy + 2 = 0$ is an example of a linear equation. never
    $xy = -2$ $y = -\frac{2}{x}$
19. The slope of a line that slants downward to the left is positive. always
20. The *y*-intercept of a line is the point at which the line crosses the *y*-axis. always
21. The slope of a vertical line is zero. never
    undefined
22. A line whose slope is undefined is parallel to the *y*-axis. always
23. Increasing the value of (*m*) in the equation $y = mx + b$ increases the slope of the line that is the graph of the equation.
    $y = 2x + 3$
    $y = 5x + 3$
    actual # always
    steepness sometimes

Could be thought of two diff. ways.

24. Decreasing the value of b in the equation $y = mx + b$ decreases the slope of the line that is the graph of the equation. ↙ y-int never

25. The point-slope formula for the equation of a line is $y = m(x - x_1)$. never. $y - y_1 = m(x - x_1)$ Since we have x_1 MUST have y_1.

26. $x = a$ is the equation for a vertical line. always (y=0)

27. The line represented by the equation $y = 2x - \frac{1}{2}$ has slope $-\frac{1}{2}$ and x-intercept 2. never (m = 2)

28. If $y = mx + b$, then m represents the rate of change of y with respect to x. always

29. A horizontal line has no slope. never (0 slope)

30. Perpendicular lines have the same y-intercept. sometimes

31. Parallel lines have the same slope. always

32. Two lines are perpendicular if $m_1 * m_2 = 1$ $m_1 * m_2 = -1$ never

33. A vertical line is perpendicular to a horizontal line. always

34. A line parallel to the y-axis has zero slope. never (undefined)

35. It is possible to write a linear inequality in two variables that has no solutions. never

36. The exponents on the variables in a linear inequality in two variables are 1. always.

37. The graph of a linear inequality is a half-plane. always

38. The graph of a linear inequality in two variables represents a function. never

39. The solution of a linear inequality in two variables containing $\leq$ or $\geq$ includes the line separating the half-planes. always

40. The solution of the inequality $y > x + 2$ is all the points above the line $y = x + 2$. always