Algebraic Reasoning TEST 3

For questions 1-4, tell whether or not the relation represents a function and explain your reasoning.

1. (-4, 8), (2, -1), (5, 8), (-1, 6)

|  |  |
| --- | --- |
| x | f(x) |
| -1 | 4 |
| 0 | 3 |
| -3 | -9 |
| 3 | 5 |
| -1 | -2 |

1. 



1. Plot the following points on the given graph.

(-2, 4), (0, 5), (2, 3), (-5, -1), (6, -7)

1. Calculate the slope of the line that goes through (8, -2) and (2, -2).
2. Identify the slope in the following equations.

y = -3x + 5

y – 6 = 4(x – 2)

1. Calculate the slope of the line given below.



1. Calculate the slope of the line given in the following table.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| x |  | -4 | -2 | 0 | 2 | 4 | 6 |
| y |  | 9 | 6 | 3 | 0 | -3 | -6 |

1. Identify the y-intercept in the following graph.



1. Identify the y-intercept in the given equation.

y = 2x – 8

1. Identify the y-intercept of the line represented by the given table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x | -3 | -2 | -1 | 0 |
| y | 3 | 6 | 9 | 12 |

1. Identify the x-intercept of the given linear function.



1. Identify the x-intercept of the line represented by the given table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | -2 | -1 | 0 | 1 | 2 |
| y | 4 | 0 | -4 | -8 | -12 |

For problems 15-17, write the equation of the line in **slope-intercept** form.

1. The line with a slope of $-\frac{5}{3}$ that goes through the point (0, -10).
2.

|  |  |
| --- | --- |
| x | y |
| -3 | -8 |
| 0 | -4 |
| 3 | 0 |
| 6 | 4 |

1. 

For problems 18-20, write the equation of the given line in **point-slope** form.

1.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | -4 | -1 | 0 | 2 | 5 |
| f(x) | 10 | 4 | 2 | -2 | -8 |

1. The line with a slope of -5 that goes through the point (3, -3).



1. The line that goes through (8, 3) and (-1, -3).

For problems 22-23, put the equations for the linear functions in slope-intercept form.

1. y – 9 = –2(x – 4)
2. 4x – 10y = 3
3. Identify the slope in the following equation.

–3x – 2y = 5