

2.REV.2 – Linear Functions Review

Problems 1 – 8: True or false? If false, explain your reasoning.

1. A linear function can have different rates of change over different intervals.
2. A linear function can have a slope that is zero.
3. The line $3x + 5y = 7$ has a slope of $\frac{3}{5}$.
4. A line that goes through the point $(-2, 3)$ and whose slope is 4 has the equation $y = 4x + 5$.
5. The line $4x + 3y = 52$ intersects the x -axis at $x = 13$.
6. The line that passes through the points $(1, 2)$ and $(4, -10)$ has slope 4.
7. The lines $y = 8 - 3x$ and $-2x + 16y = 8$ both cross the y -axis at $y = 8$.
8. The linear equation $y - 5 = 4(x + 1)$ is equivalent to the equation $y = 4x + 6$.

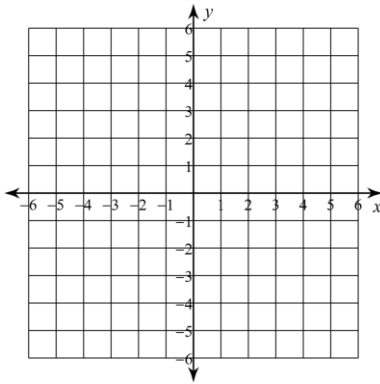
For each line whose equation is given, find the slope, x -intercept, and y -intercept. Then graph the line.

9. $y = \frac{5}{3}x - 4$

Slope: _____

x -intercept: _____

y -intercept: _____

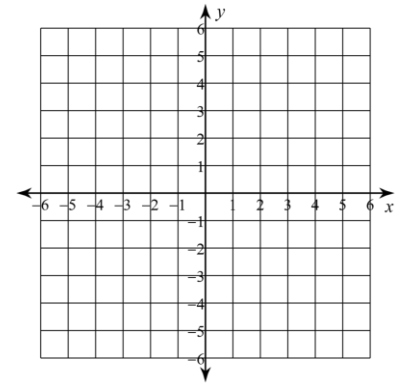


10. $y = -\frac{1}{4}x + 2$

Slope: _____

x -intercept: _____

y -intercept: _____

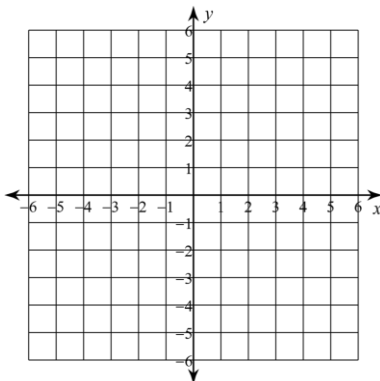


11. $5x - 10y = 20$

Slope: _____

x -intercept: _____

y -intercept: _____

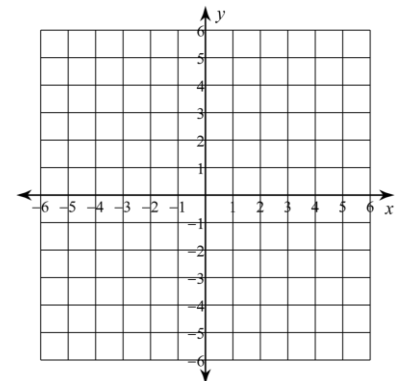


12. $3x + 4y = -8$

Slope: _____

x -intercept: _____

y -intercept: _____



Determine whether the table of values represents a linear function. If so, identify its rate of change.

13.

x	$f(x)$
-5	-10
2	5
6	20
9	35

14.

x	$g(x)$
10	0
20	15
24	21
40	45

15.

x	$h(x)$
-4	15
4	9
8	6
10	4.5

Identify the lines as parallel, perpendicular, or neither.

16. $8x - 10y = 16$
 $y = -\frac{4}{5}x + 7$

17. $y = 7 + 9x$
 $y - 4 = -\frac{1}{9}(x + 5)$

18. passes through $(-2, -7)$ & $(3, 8)$
 $y = \frac{1}{3}x - 2$

Write the equation of a line that passes through the given points. Simplify, if necessary, to write the equation in slope-intercept form.

19. $m = -\frac{1}{2}$; x intercept = 6

20. $m = -3$; $(1, -5)$

21. x int. = 12; y int. = -3

22. $(-3, -4)$ & $(2, 16)$

23. perpendicular to $3x - 5y = 2$;
 passes through $(3, -6)$

24. parallel to $5x + y = 6$;
 passes through $(5, 3)$