

Math 111 Worksheet 4

Show all work for full credit.

1. Decide whether the following functions are linear. Explain how you know.

a.

x	3	5	8	12	17
g(x)	7	14	21	28	35

b.

x	2	4.5	7	9.5	12
f(x)	1.25	2.5	3.75	5	6.25

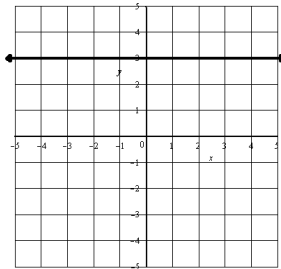
c.

x	5	7	10	14	19
h(x)	20	26	35	47	62

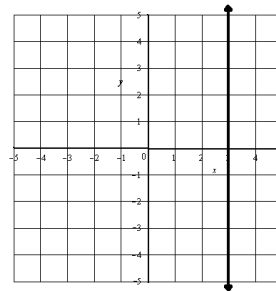
2. Find the slope-intercept form of the equation of the line through $(-3, 5)$ perpendicular to the line $2x - 3y + 6 = 0$.

3. Find the slope-intercept form of the equation of the line through $(2, 10)$ that is parallel to the line $5x - 4y + 28 = 0$.

4. Write the equation of the line.

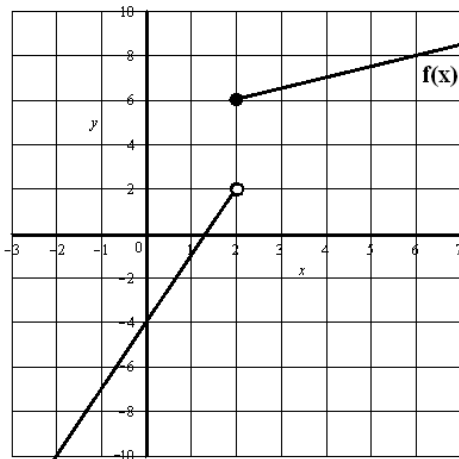


Equation: _____

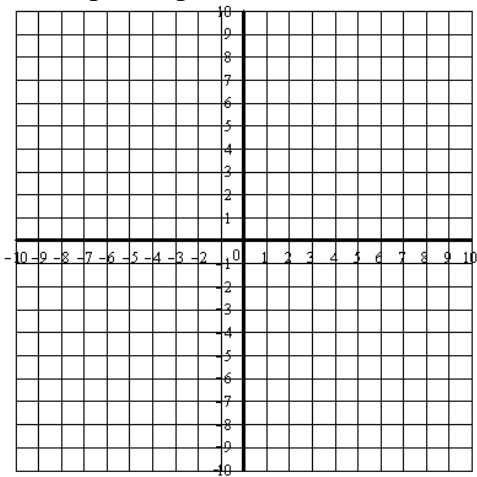


Equation: _____

5. Write a piecewise linear function to represent the following.



6. Graph the piecewise-defined function.



$$f(x) = \begin{cases} 4x - 5 & \text{for } x < 3 \\ -\frac{2}{3}x + 1 & \text{for } x \geq 3 \end{cases}$$

7. Solve the following system of linear equations algebraically.

(Hint: Use substitution or elimination)

$$2x + 5y = -4$$

$$3x - y = 11$$