Unit 3 Test Review Worksheet

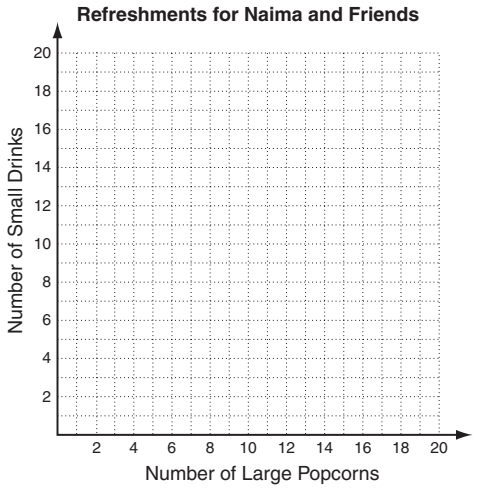
1. Tell whether each of the following satisfy a linear function. [redacted]

a. {(0, 5), (-2, 3), (-4, 1), (-6, -1), (-8, -3)} **b.** $2y = -3x^2$ **c.** $y = 4x - 7$

2. Write each equation in standard form and identify the values of A, B and C.

a. $\frac{1}{3}y = -1$ **b.** $\frac{3}{4}x = y + 8$ [redacted]

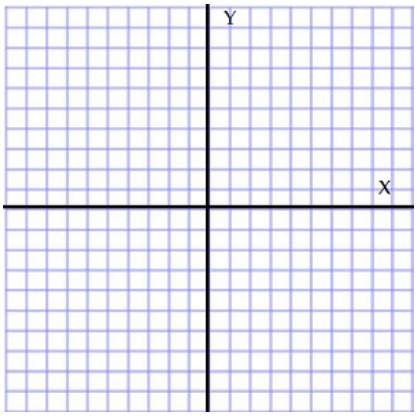
3. Naima has $40 to spend on refreshments for herself and her friends at the movie theater. The equation $5x + 2y = 40$ describes the number of large popcorns x and small drinks y she can buy. Graph this function and find its intercepts. What does each of them represent?



4. Find the x- and y- intercepts.

a. $2y = x + 3$ **b.** $f(x) = -x - 5$

5. Create a table of values then graph the function: $x + 3y = 6$ for the domain {-6, -3, 0, 3, 6}.



X	F(x)	Y	(x,y)
-6			
-3			
0			
3			
6			

6. The table shows the average retail price of cherries from 1986 to 1991. Find the rate of change in cost for *each* time interval. Which time interval showed the greatest rate of change? Was the rate of change ever negative? If so, when?

Year	1986	1988	1989	1991
Cost per lb ($)	1.27	1.63	1.15	2.26

7. Find the slope of each of the following:

a.

x	*y*
4	−5
8	−3
12	−1
16	1

b. $(-3, -1)$ and $(2, -1)$

8. Find the value of r so that the line passes through each pair of points has the given slope.

a. $(12, 10)$ and $(-2, r)$, $m = -4$

b. $(3, 5)$ and $(-3, r)$, $m = \frac{3}{4}$

9. Tell whether each equation is a direct variation. If so, identify the constant of variation.

a. $8y = 3x + 1$

b. $5x - 9y = 0$

10. The value of y varies directly with x, and $y = -14$ when $x = \frac{1}{2}$. Find y when $x = -1$.

11. Determine whether the sequence is arithmetic. If so, find the common difference and the next three terms.

a. $3, \frac{23}{8}, \frac{11}{4}, \frac{21}{8}, \ldots$

b. $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \ldots$

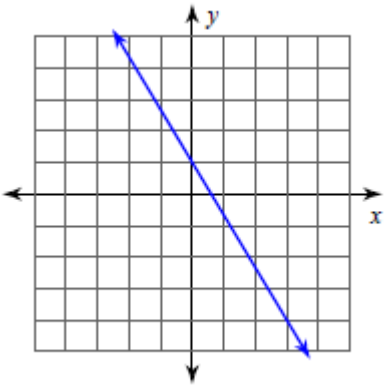
12. Write an equation for the *n*th term of each arithmetic sequence then find the 50th term.

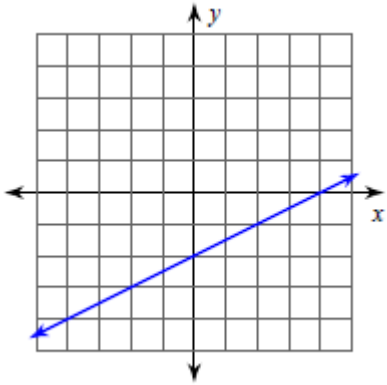
a. 15, 13, 11, 9, …

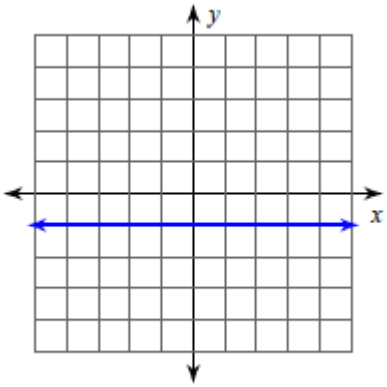
b. $-1, -0.5, 0, 0.5, \ldots$

[redacted]

14. Find the slope of the given functions. Write the equation in slope-intercept form.

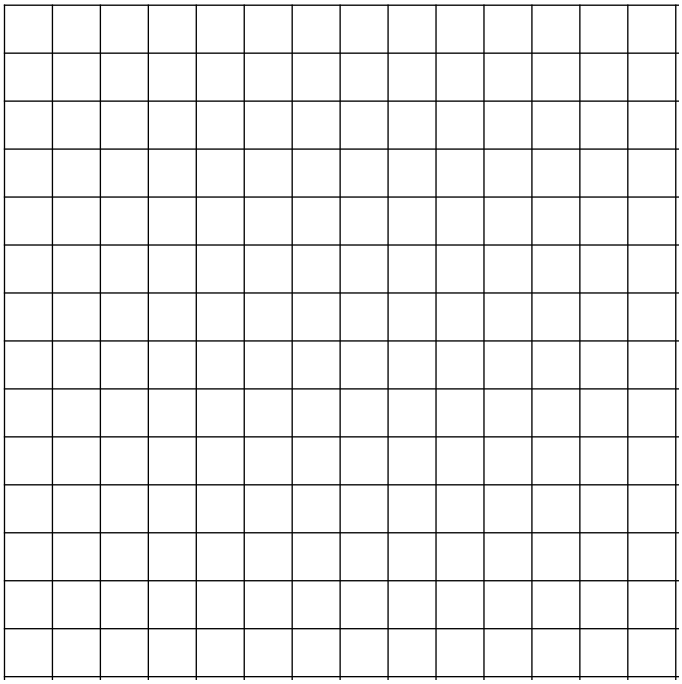






15. Given the function g(x) = -10x + 400 represents the balance on an A-tunes gift card where g(x) represents the balance on the card in dollars and x represents the number of albums purchased.

Find the x and y-intercepts, graph the function, give the meaning of the intercepts in the context of the problem situation and then find the zero of the function.



[redacted]

17. Ricardo is buying computer cables from an online store. If he buys 4 cables, the total cost will be $24. If he buys 5 cables, the total cost will be $29. If the total cost can be represented by a linear function, will the function be *proportional* or *nonproportional*? Explain.