

Unit 3 Test Review Worksheet

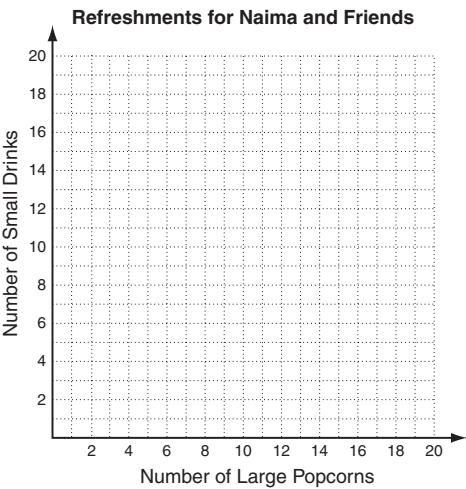
1. Tell whether each of the following satisfy a linear function. Explain.

- 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. $\frac{3}{4}x = y + 8$
- c. $\frac{2}{3}x - \frac{1}{3}y = 2$

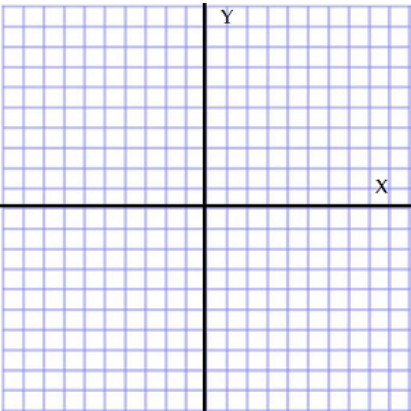
3. Naima has \$40 to spend on refreshments for herself and her friends at the movie theater. The equation $5x + 2y = 40$ describes the number of large popcorns x and small drinks y she can buy. Graph this function and find its intercepts. What does each of them represent?



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 $(2, -1)$

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

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

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

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

a.
 $15, 13, 11, 9, \dots$

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

13. For each table of values. Then determine if the function is proportional or non-proportional and explain.

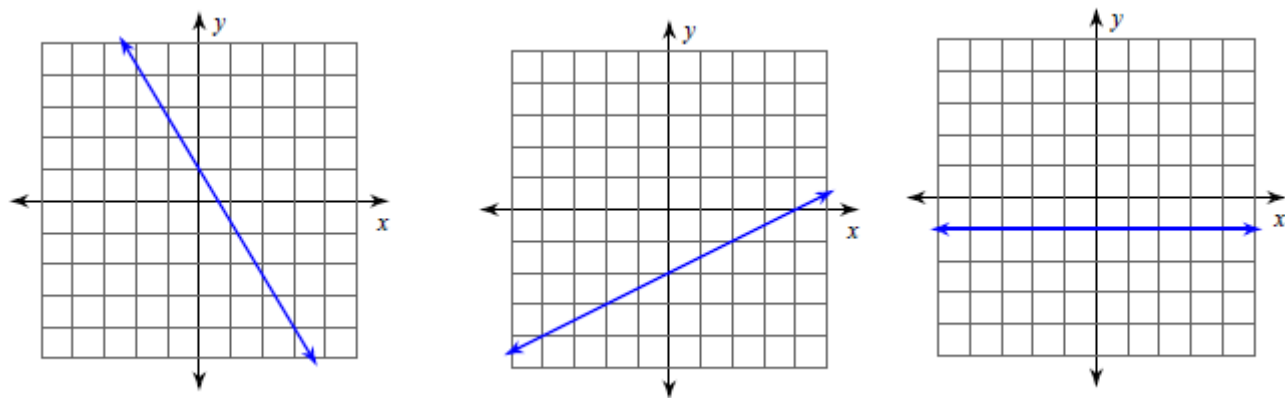
a.

X	0	23	35	40	45
Y	0	46	70	80	95

b.

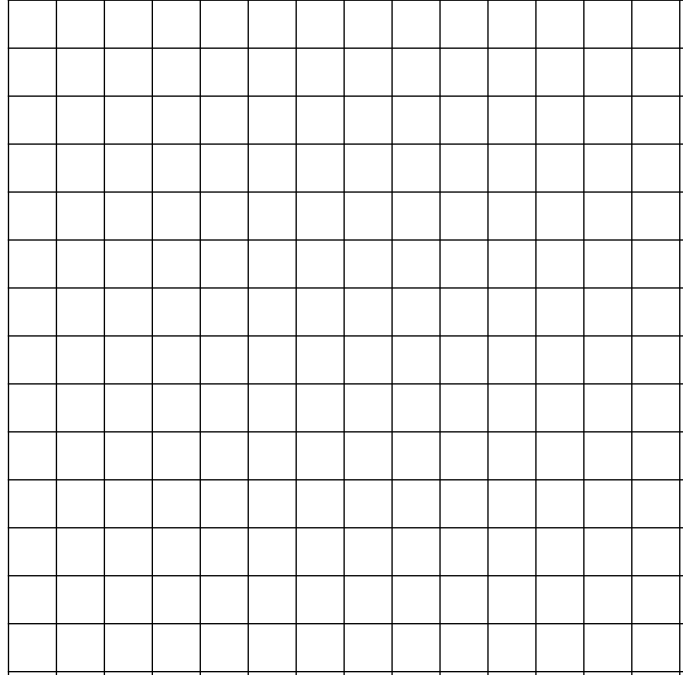
X	0	17	35	40	45
Y	0	8.5	17.5	20	22.5

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.



16. The exchange rate from one currency to another varies every day. Recently the exchange rate from U.S. dollars to British pound sterling (£) was \$1.58 to £1. Write and solve a direct variation equation to determine how many pounds sterling you would receive in exchange for \$90 of U.S. currency.

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.