

Practice Test – Linear Functions

Be Sure to SHOW ALL Work in a NEAT and ORGANIZED Fashion

KNOWLEDGE & UNDERSTANDING

1. a) Complete the table of values for the linear equation $y = 4x - 1$.

x	$y = 4x - 1$	(x, y)
-1		
0		
1		
2		

- b) What is the slope of this equation?

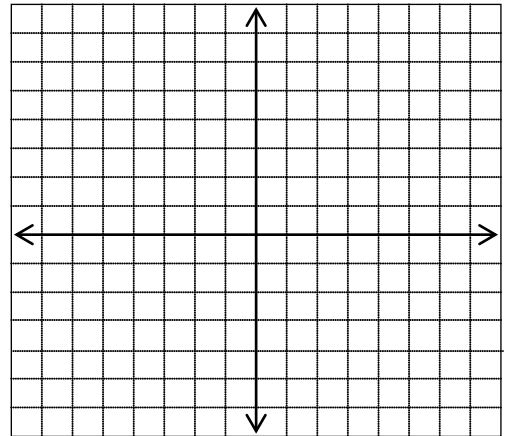
- c) What is the y-intercept?

- d) Does the point $(-10, -40)$ lie on the line (algebraically **show your work**)? Hint: do L.S.=R.S. check

2. a) Sketch the graph for $y = -3x - 2$

- b) What is the slope?

- c) What is the y-intercept?

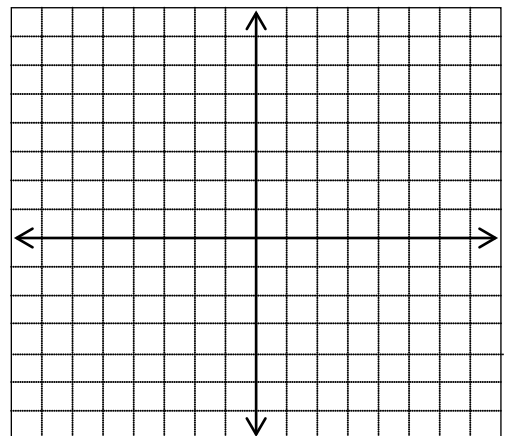


3. a) Plot the following points on the grid and draw a line through the points. **A (-4, 5)** and **B (2, 2)**

- b) From the graph, find **m**, the **slope** and **b**, the **y-intercept** of the line AB.

$m =$ _____ $b =$ _____

- c) Write the equation of the line in the form $y = mx + b$.



d) Does the point $(8, 0)$ lie on the line (algebraically show your work)?

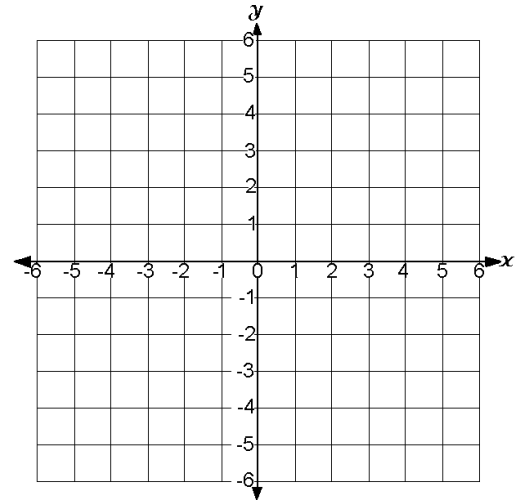
4. On the same set of axes, **graph** and **label** the following linear relations.

a) $y = 3x - 4$

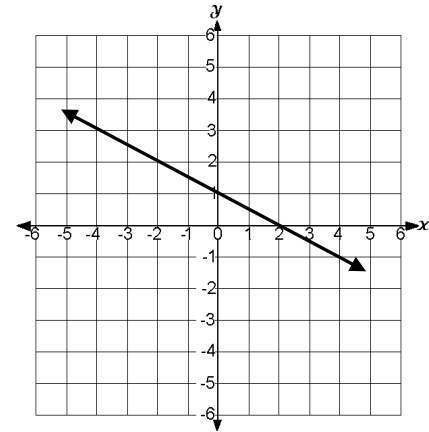
b) $y = -\frac{2}{3}x + 4$

c) $y = 2$

d) $x = -4$



5. State the **equation** of the following line in $y = mx + b$ form.



6. Find the equation of the line with slope $= -5$ and y -intercept $= 2$

7. Find the equation of the line with slope -2 that passes through point $(3, -3)$

8. Find the equation of the line passing through points **A** $(-7, 6)$ and **B** $(4, 0)$.

9. Write each equation in slope y-intercept form and state the slope and y-intercept.

a) $2x + y + 7 = 0$ $m =$ _____ $b =$ _____

b) $3x + 2y - 8 = 0$ $m =$ _____ $b =$ _____

10. The line $y = mx - 7$ goes through the point (3, 5). Find the value of m .

APPLICATION

11. A large pizza at Monster Pizza costs \$12.00 plus \$0.75 per topping.

a) Complete the following table of values.

# Toppings	Cost
0	
1	
2	
3	
4	
5	
6	

b) Write an equation to represent this relationship.

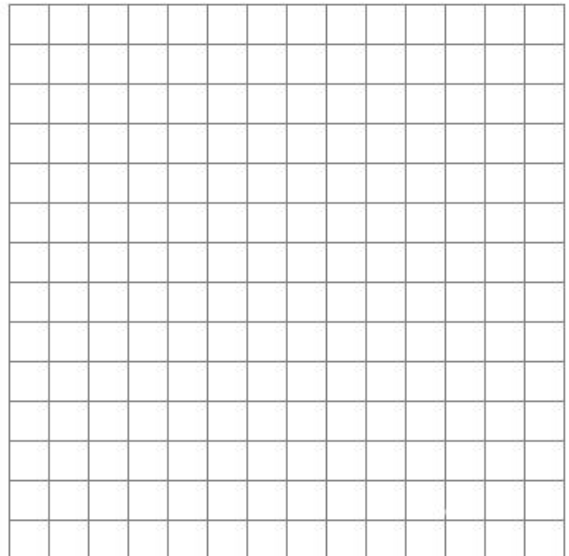
c) What **IS** the y-intercept?

d) What **IS** the slope of this relationship?

e) What does the y-intercept represent in **THIS** problem?

f) What does the slope represent in **THIS** problem?

g) Graph this relationship [3 marks]
Don't forget to label **ALL** parts of your graph.



12. Match each type of slope with its correct image.

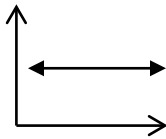
___ Positive

___ Negative

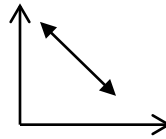
___ Zero Slope

___ Undefined

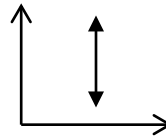
A



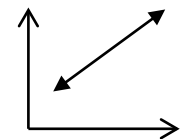
B



C



D



13. State an equation that:

a) has a **steeper slope** than $y = 3x + 4$

b) is **parallel** to the line $y = -4x + 3$

c) has an **undefined** slope

d) has a **zero** slope

14. Tyler borrows \$400 from his parents to buy a new snowboard. He plans to pay back a fixed amount of \$50 each week. The amount still owing is modeled by the equation $A = 400 - 50n$, where A is the amount still owed and n is the number of weeks since Tyler borrowed the money.

a) How many weeks will it take Tyler to pay off the loan?

b) How much will Tyler owe after 5 weeks?

c) At the 5-week mark, how much longer will it take Tyler to pay off the loan?

15. The Belhaven Banquet Hall charges a flat fee of \$900 and a per-person fee of \$45.

a) Write a linear equation to model the cost in dollars (C) of holding a banquet for n people.

b) How much will it cost to hold a banquet for 85 people?

c) If you had a **maximum** budget of \$3400, how many people could attend a banquet?