

1R Linearity Review

Name: _____ Per: _____

SHOW YOUR WORK IN PENCIL ONLY. NO WORK, NO CREDIT.

1. Jessica wants to buy a \$45 pair of shoes. She wrote a check which bounced. The bank charged her a \$20 insufficient funds fee which made her account be overdrawn by \$50. She has a babysitting job each Friday that pays her \$25 a week and she decides to put \$15 into the bank from that money to pay off the overdraft and save for the shoes.
 - a. Write an equation to show how much money she has in the bank at any time. _____
 - b. What is the slope of the equation? _____ What does it mean in context? _____
 - c. If she wants to wear the shoes to a dance in 6 weeks, will she have enough money to buy them? _____ SYW.

 - d. What is the y-intercept? _____ What does it mean in the context? _____
 - e. How long will it take her to have enough money in the bank to buy the shoes? SYW _____

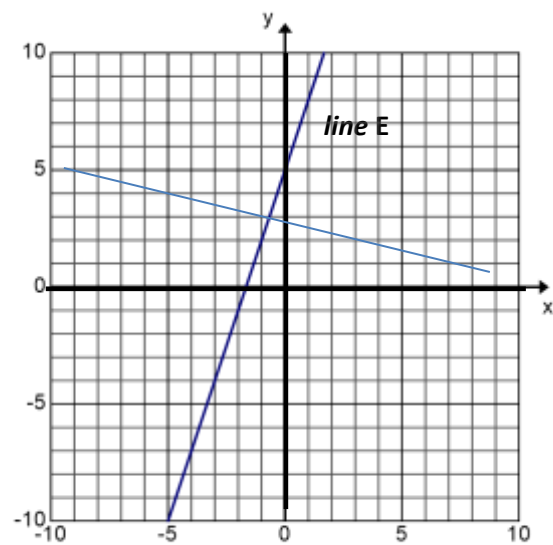
 - f. Show how to find the x-intercept:

 - g. What is the x-intercept? _____ What does it mean in context? _____
 - h. How would the equation change if she wants to buy 3 pairs of these shoes? _____
 - i. How many weeks will it take her to save enough money to buy 3 pairs of these shoes? _____ SYW.

2. Daisy, Billy Bob, and Jethro have two equations: $y = -\frac{1}{2}x + 6$ and $x - 2y = -18$. Daisy explains that the slopes are different so they are neither parallel nor perpendicular. Billy Bob says that if you solve both equations for y, they have negative reciprocal slopes and are perpendicular. Who should Jethro believe and **explain how you know**. SYW.

3. I bought a bag of candy that weighs 35 ounces with each candy inside weighs 2.5 ounces. Define your variables and write an equation that shows how much the bag weighs as I keep eating the candy.
 - a. Define your variables: _____
 - b. Equation: _____
 - c. What does your slope represent in this situation? _____
 - d. What does your y-intercept represent in this situation? _____
 - e. What would be the x-intercept and what would it represent? _____

4. Tell how you know if the following are parallel, perpendicular, or neither. Justify your answer below mathematically.



5. Write the equation for line E. _____

6. Given the tables below, tell which are linear and how you know. If they are linear, write the equation. EC. Write all the equations also.

X	Y
-2	10
5	-3
8	6
4	-1

Linear? _____

X	Y
-2	-12
5	9
8	18
4	6

Linear? _____

X	Y
-2	4
5	25
8	64
4	16

Linear? _____

X	Y
3	16
6	22
9	28
12	34

Linear? _____

Equation: _____ Equation: _____ Equation: _____ Equation: _____

Find the **equations of the lines through the following points** and list the **slope, y-intercept, and x-intercept**.

7. (6, 10) and (4, 14)

8. (-2, 8) and (-6, 6)

Slope: _____ y-int: _____ x-int: _____

Slope: _____ y-int: _____ x-int: _____

Equation: _____

Equation: _____

9. Are the lines from #7 and #8 **parallel, perpendicular, or neither**. _____ EXPLAIN:

Write equations for the following:

10. a. Write any equation that would be **parallel** to the line $y = -2x + 4$. _____

b. Make your equation from 10a pass through the point (10, 4). _____

11. a. Write any equation that would be **perpendicular** to the line $-2y = -3x + 6$. _____

b. Make your equation from 11a pass through the point (8, 3). _____