Name: _____ Period: _____ Date: _____

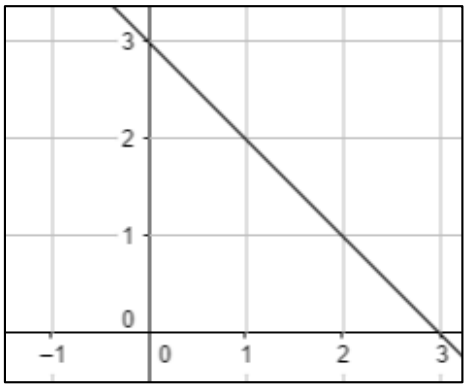
Unit 5 – Linear Functions Review Guide

1. **Determine whether the rate of change is constant for the data set. If yes, identify the rate of change both numerically and in words.**

Football Game's Stats

Game	Goals
1	3
2	6
3	9

2. **Find the slope of the line given below.**



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3. **Find the slope of the line passing through the points (1,0) and (-4,2).**

4. **The slope of a vertical line is:**

   a. **zero**
   b. **undefined**
   c. **1**
   d. **None of these**

5. **For the data in the table, tell whether y varies directly with x. If it does, write an equation for the direction equation.**

x	y
6	-6.9
-10	-11.5
7	-8.05

6. **Which of the following equations represent a direct variation?**

   a. $y = 2x + 1$
   b. $3x - 2y = 0$
   c. $9y - 9 = 9x$
   d. **Both b and c**

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7. **Determine whether the given below equation represents a direct variation or not. If it does, find the constant of variation.**

$$3y - 7 = 2x - 7$$

8. **Assume that y varies directly with x. Write an equation relating x and y. Also find the value of y when is 6.**

$y = -\frac{4}{5}$ **when** $x = -4$

9. **Find the slope and y-intercept of the linear equation $y = -2.5x - 3.01$.**

10. **Write an equation of a line with the given slope m and y-intercept b.**

$m = 0.4, b = 1$

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11. Write an equation in slope-intercept form of the line that passes through the points $(12, 10) and (16, 8)$.

12. The slope formula is given as:

a. $Slope\ m = \frac{y_2 - y_1}{x_2 - x_1}$
b. $Slope\ m = \frac{x_2 - x_1}{y_2 - y_1}$
c. $Slope\ m = x_2 - x_1$
d. $Slope\ m = y_2 - y_1$

13. Write an equation in point-slope form of the line passing through the point given below and having slope m.

$(-3, -5)$; $m = -2$

14. The point-slope form of a linear equation is:

a. $y - x_1 = m(x - y_1)$
b. $y - y_1 = m(x - x_1)$
c. $y = mx + b$
d. None of these

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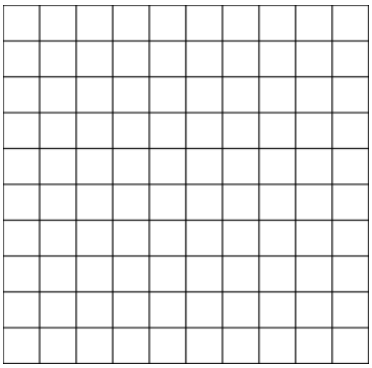
15. Write an equation in slope-intercept form of the line passing through $(3, 1)$ and $(4, 3)$.

16. Graph the equation $y + 3 = 2(x + 1)$.



17. Find the x- and y- intercepts of the graph of the equation given below.

$$x - 2y = 6$$

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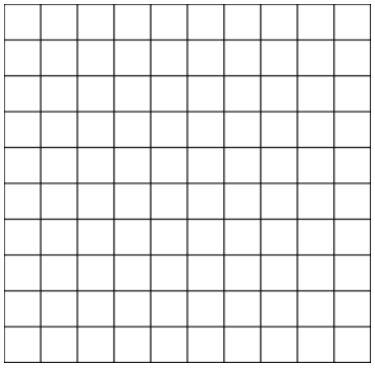
18. For the equation $y = 0$, tell whether its graph is a horizontal or vertical line. Give reason for your answer.

19. Graph the equation $4x - 8y = 12$ using x- and y-intercepts.



20. The point $(0, -2)$ represents a/an:

a. x-intercept
b. y-intercept
c. z-intercept
d. None of these

21. Write an equation in slope-intercept form of the line that passes through the given point and is parallel to the graph of the given equation.

$$(-1, 6)\ ;\ y = 9x - 5$$

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22. Write an equation in slope-intercept form of the line that passes through the given point and is perpendicular to the graph of the given equation.

$$(2, 1)\ ;\ y = 2x + 1$$

23. Determine whether the graphs of the given equations are parallel or perpendicular or neither. Give reason for your answer.

$y - x = 10$

$y = -x - 4$

24. The slope of the line perpendicular to the line $y = 3x + 6$ is:

a. -3
b. $\frac{1}{3}$
c. $-\frac{1}{3}$
d. 3

25. The correlation between two data sets can be:

a. Positive
b. Negative
c. Both a and b
d. None of these

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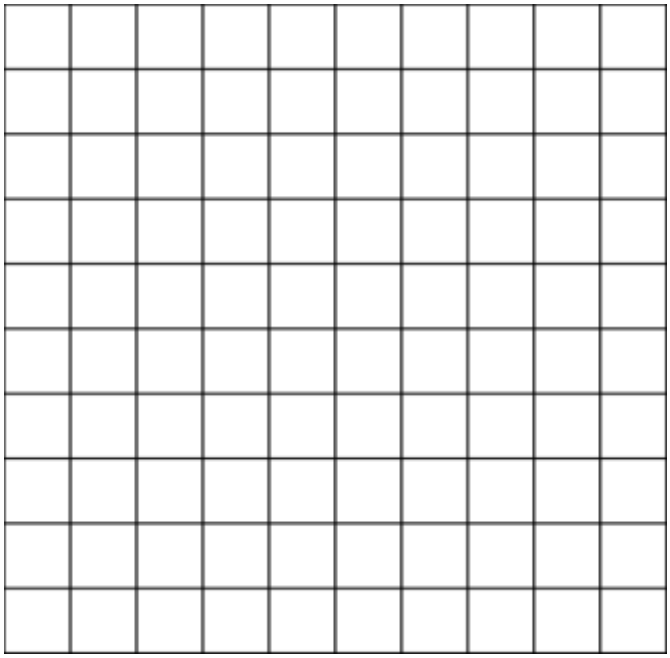
26. For each table, make the scatter plot of the data. Describe the type of correlation the scatter plot shows.

Number of Questions	2	4	6	8	10
Time taken to Solve (in min.)	10	20	30	40	50

Graph:



27. Describe how the slope of a line relates to a trend line. What does the y-intercept represent?

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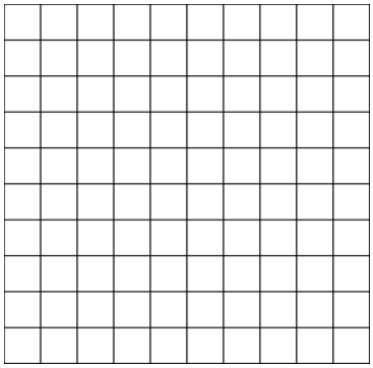
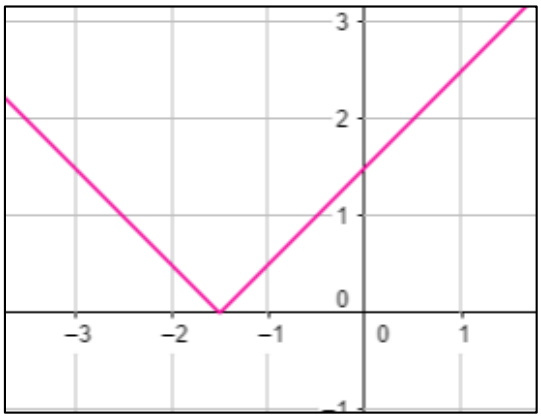
28. Graph the equation $y = |x| - 1$ by translating the function $y = |x|$.



29. Write the equation represented by the graph shown below.



30. Graph the equation $y = -|x - 2|$ by reflecting and translating the function $y = |x|$.