**Unit 3 Study Guide: Equations and the Coordinate Grid**

**\*Keep this study guide in the front of your binder throughout unit 3. Add to the resources, notes, and examples as we go!\***

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| **Learning Target** | **Resources** | **Notes** | **Examples** |
| 8.EE.5-I can graph a proportional relationship in the coordinate plane. (K) | SB Act. 3.1 |  | Determine if the following data sets are linear or non-linear. Use graph paper if needed:   1. (2,-3)(4,-2)(-2,-5)(0,4) 2. (0,5)(4,-3)(3,-1)(2,1) |
| 8.EE.5-I can use a graph, table, and an equation to determine the unit rate of a proportional relationship and use the unit rate to make comparisons between various proportional relationships. (R) | SB Act. 3.1 |  | Determine the unit rate of the equation and table below. How does the unit rate of the table compare to the equation?   |  |  | | --- | --- | | x | y | | 1 | -8 | | 3 | -4 | | 5 | 0 |   y = -2x - 12 |
| 8.EE.5- I can interpret the unit rate or rate of change of a proportional relationship as the slope of the graph. (R) | SB Act. 3.3 |  | Determine the unit rate (slope) of the graphhttp://www.algebra-cheat.com/articles_imgs/2061/linear36.jpg |
| 8.EE.6- I can justify that an equation in the form *y=mx + b* represents the graph of a linear relationship with a slope (rate of change) of *m* and a y-intercept (initial value) of *b*. (R) | SB Act. 3.4 and 3.5 |  | Identify the slope and y-intercept in the linear equation below. Describe how you would use these to graph the line. y = 5x – 2 |
| 8.EE.6- I can use similar, right triangles to justify that the slope (rate of change) is the same between any points on a non-vertical line. | Slope and Similar triangles packet |  | Determine if the following points lie on the same non-vertical line by determining if the slope is the same between them.  (2,3) (4,2) (8,0) |
| 8.EE.8- I can use the graph of two linear equations to estimate the solution of the system. (S) | SB Act. 3.7 |  | Describe the graph of systems with…  No solution:  One solution:  No solution: |
| 8.EE.8- I can explain how the point(s) of intersection of two graphs will represent the solution to the system of linear equations.(R) | SB Act. 3.7 |  | Solve the following system by graphing. Give the solution:  y = 3x + 2  y = -2x – 8 |
| 8.EE.8- I can use algebraic reasoning (simple substitution) and the properties of real numbers to solve a system of linear equations. (R) | SB Act. 3.7 |  | Solve the following system algebraically:  y = -3x + 6  3x + y = 5 |