Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_\_ GRADE: \_\_\_\_\_\_\_\_\_\_\_\_

Unit 3: Linear Functions Part 1

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| ❶ The graph below shows a relationship.  a) Create a verbal description of the relationship.  b) Is the relationship a linear function? How do you know?  c) How many solutions are there for the relationship? How do you know? | ❷ Graph the solutions to the equation .    a) how do you know by looking at the equation that the relationship is linear?  b) how do you know by looking at the graph that the relationship is linear? |
| ❸ A hot air balloon rose from a height of 100 meters to 400 meters in 3 minutes. What was the balloon’s rate of change? | ❹ A student’s grade fell from a 96 to a 60 over 3 weeks because they slacked off and stopped doing their work. a) Create a properly labeled graph for this situation.  b) Using the graph, what is the rate of change? |
| ❺ Solve: | ❻ What kind of number is ?  How do you know? |
| http://www.regentsprep.org/regents/math/algebra/ap3/fixpic3.gif❼ The graph below shows a relation.  a) Which point(s) need to be changed in order to make this relation a linear function?  b) Draw your changes from part (a) on the graph. | ❽ Over the summer you work walking dogs around your neighborhood. You decide to charge a flat fee for the service, and then an additional rate per dog that you walk. If you walk 5 dogs, you earn $18.00. If you walk 2 dogs, you earn $9.00.  a) complete the chart.  b) create an equation for this situation.  c) graph the situation.  d) where is it appropriate to include arrows for this graph? |