

Name _____ Date _____

Summative Assessment Questions Linear and Quadratic Equations

1. On a Cartesian Coordinate system, there are two points (1,5) and (2,8) labeled on the graph. Write a linear relationship that includes these two points.

$y=4x+1$

2 points total

2. What is necessary for three points on a graph to be able to write a linear equation? Be specific.

The relationship between two of the points needs to be the same relationship for the third point. In other words, for every unit increase in one variable of one point corresponds to a change in the output variable to reach the following point. This output variable change per unit increase needs to be the same to get to the next point.

*A **linear equation** is an algebraic equation in which each term is either a constant or the product of a constant and a single variable.*

5 points total

-3 if student only mentions that the graph makes a straight line

3. Give an example of a linear relationship in the real world. Write an equation for this (it does not need to be accurate) and describe what the relationship means in terms of the variable you chose.

Answers will vary.

5 points total

2 points for linear relationship example

1 point for equation

2 points for equation interpretation

4. How fast does a fish swim if he starts going 2 m/s for 3 seconds and his speed increases to 9 m/s for another 3 seconds?

5.5 m/s

3 points total

5. If $y=3x^2+5$, what is the area of the region bounded by that equation from $0 < x < 3$ and the x- and y-axis.

Answer will vary but should be approximately 22. Use Riemann sum to approximate the area under curve.

5 points total

3 points if student use one trapezoid

2 points if student use one rectangle.