

First & Last Name: _____ Period: _____ ID: A

Directions: *Show ALL thinking* to earn maximum credit..Each question is worth 10 points. Do your best and know that I am rooting for you!

“Tell the truth - all the time.” - Randy Pausch

GGG Investigations 1 - 3 Quiz (Mazzeo 2013)

Short Answer

1. Suppose there are 120 trout in a lake and the yearly growth rate for the population is 16%.
 - a.) Write the equation for t trout after y years.
 - b.) Create a table showing the trout population, round to nearest whole trout, for the first four years?

<i>year (y)</i>	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>trout (t)</i>					

2. A ruba had the same thickness as a modern U.S. penny (about 0.06 inch). Suppose the king had been able to reward the peasant by using Plan 1 (doubling the number of rubas in each square).What would have been the height of the stack of rubas on square 30? Round your solution to the nearest foot.

3. In Problem 1.2, suppose a Montarek ruba had the value of a modern U.S. quarter. What would be the dollar value of the rubas on square 20 of the peasant's board?

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4. Suppose a movie ticket costs about \$7, and inflation causes ticket prices to increase by 4.5% a year for the next several years. At this rate, how much will a ticket cost 30 years from now?

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5. You can find the equation for an exponential relationship if you know two points on its graph. Find the equation of the exponential relationship whose graph passes through the points $(3, 2944)$ and $(5, 47104)$.

GGG Investigations 1 - 3 Quiz (Mazzeo 2013)

Answer Section

SHORT ANSWER

1. a.) $t = 120(1.16)^y$
b.) about 4.5 years
2. $2^{29} = 536870912rubas$
$$\frac{(2^{29})(0.06)}{12} \approx 2684355feet$$
3. square 30: \$5,368,709.12;
4. About \$26.22 [Note: Students may round the prices in parts (a)–(c) to \$8.75, \$10.75, and \$26.25 (or \$26), arguing that movie theaters don't generally charge prices like \$8.72 or \$10.87.]
5. $y = 46(4)^x$