

Math Practice Test Constructed Response Rubric Grade 11

Jamin invested \$1,000 in an account that earns 3% interest compounded yearly. He set up the equation below to represent the amount, A dollars, in the account after t years.

$$A = 1,000(1.03)^t$$

Explain an algebraic method, including the steps, Jamin can use to determine how many years from the time of the initial investment it will take for the amount in the account to be \$1,500.

Write your answer in the space provided.

Rubric	
Score	Description
2	<p>ONE point:</p> <p>Sets up equation correctly: $1,500 = 1,000(1.03)^t$</p> <p>AND</p> <p>ONE point:</p> <p>Explanation: (Possible correct response includes but is not limited to the following example; correct responses can be represented in words, mathematical equations/expressions, and/or drawings/sketches.)</p> <p>$1,500/1,000 = 1.03^t$</p> <p>$\log(1,500/1,000) = \log(1.03^t)$</p> <p>$\log(1,500/1,000) = t\log(1.03)$</p> <p>$(\log(1,500/1,000))/\log(1.03) = t$</p> <p>$t = 13.7$ years (Explicitly stating the number of years is not required for for full credit.)</p>
1	<p>$1,500 = 1,000(1.03)^t$</p> <p>OR</p> <p>$t = 13.7$ years</p> <p>OR</p> <p>States: Set the equation equal to 1,500 and use logs to solve it.</p>
0	The response is incorrect or irrelevant.