

Use your calculator to evaluate $\lim_{t \rightarrow 2} \frac{7t^5 - 224}{t^7 - 128}$.

GRADED BY ME

SCORE: ____ / 1 PTS

Fill in the table below showing the input and output values you used to arrive at your answer. You must use at least 6 input values.

Input value =	<u>1.9</u>	<u>1.99</u>	<u>1.999</u>	<u>2.001</u>	<u>2.01</u>	<u>2.1</u>
Output value =	<u>1.3123</u>	<u>1.2562</u>	<u>1.2506</u>	<u>1.2494</u>	<u>1.2438</u>	<u>1.1876</u>
Limit =	<u>1.25</u>	OTHER VALUES POSSIBLE ABOVE				

Let P be the point on the curve of $f(x) = \sqrt{3+x^7}$ where $x = 1$.

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SCORE: ____ / 2 PTS

- [a] If Q is the point on the same curve where $x = a$, write the expression for the slope of the secant line PQ .

$$\frac{\sqrt{3+a^7} - 2}{a - 1}$$

- [b] Use your calculator to evaluate the slope of 6 **appropriate** secant lines, then guess the slope of the tangent line at P . Fill in the table below showing the values of a and the corresponding slopes you used to arrive at your answer.

$a =$	<u>0.9</u>	<u>0.99</u>	<u>0.999</u>	<u>1.001</u>	<u>1.01</u>	<u>1.1</u>
slope of secant line =	<u>1.3498</u>	<u>1.7056</u>	<u>1.7455</u>	<u>1.7545</u>	<u>1.7953</u>	<u>2.2457</u>
slope of tangent line =	<u>1.75</u>	OTHER 2 VALUES POSSIBLE ABOVE				