

3. [6 points]

a. [4 points] For which value(s) of the constant A is the function

$$R(t) = \begin{cases} 5(13)^{At} & \text{for } t < 2. \\ 20 - 3t^2 & \text{for } t \geq 2. \end{cases}$$

continuous? Find your answer algebraically and give your answer in exact form. If no such value exists, write “DNE”. Show all your work step by step.

Answer: $A =$ _____

b. [2 points] A different function, $f(d)$, has the property that $\lim_{d \rightarrow \infty} f(d) = 10$. What is the value of $\lim_{d \rightarrow \infty} 4f(2d - 14) + 9$?

Write “DNE” if the limit does not exist or “NI” if there is not enough information to answer the question. You do not need to show your work.

Answer: _____