

Name: _____

Show work needed to justify your answer.

Date: _____

HW: # 14a: Math IBSL - Standard 14 -The Reciprocal Function

5 points

1. *Ben is a dentist. He believes there is a relationship between the average number of cavities developed in each of his patients' mouths per year (y) and the number of minutes they brush their teeth each morning (x).*

Ben believes the function $y = \frac{2}{x}$ represents this relationship.

Alita and Chamse are Ben's patients.

- a. Determine how many cavities Alita is likely to develop in one year if she brushes her teeth for two minutes each morning.*
 - b. Chamse develops four cavities in a year. Find the number of minutes she likely spent brushing her teeth each morning.*
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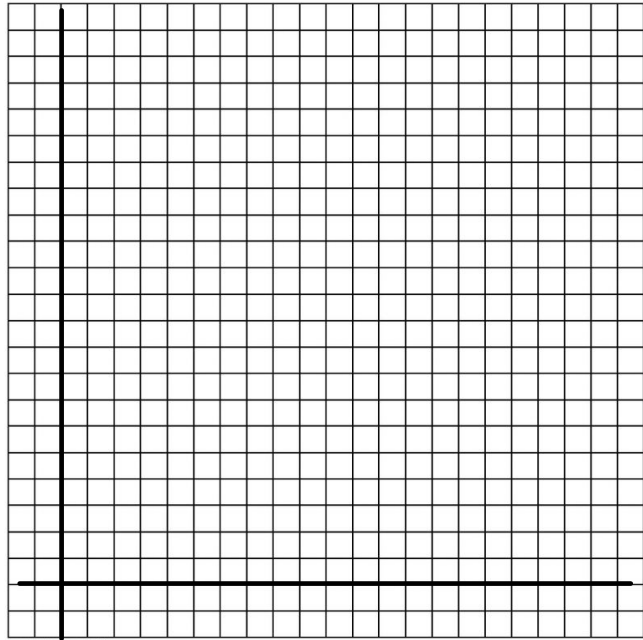
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5 points

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2. Tak's phone can store 64 videos which are each one minute long;
or 32 videos of length two minutes; or 15 videos of length four minutes, etc.
- a. Find the number of videos of length 16 minutes Tak could store on his phone.
 - b. Find the function to represent the relationship between the number of videos on Tak's phone (x) and the length of each video (y minutes)
 - c. Use your GDC to plot a graph of the function you found in part **b**.
 - d. Tak wants to store 48 videos on his phone. Plot an appropriate straight line on the same axes to help you find the maximum length of each video.
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