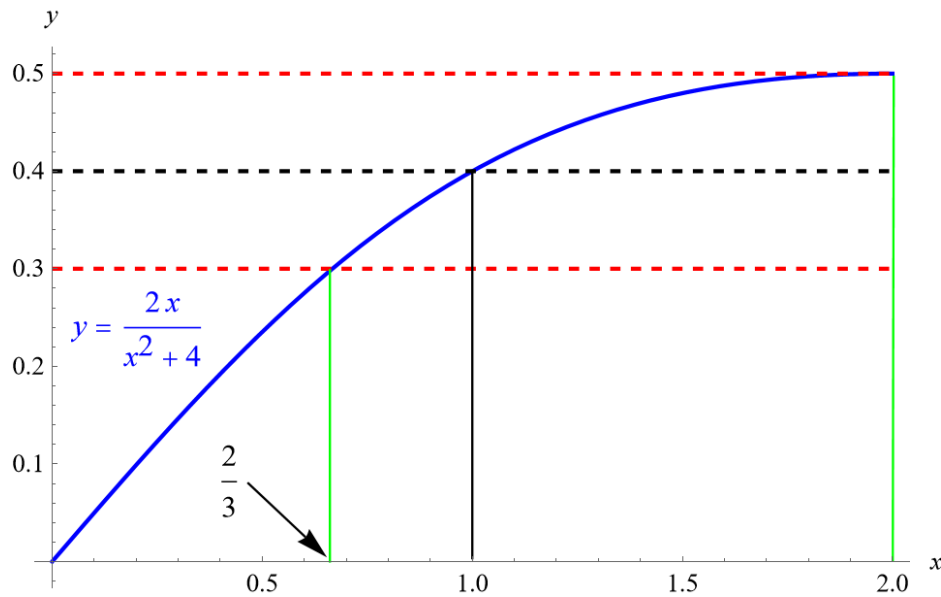## Exercise 6

Use a graph to find a number δ such that

$$\text{if} \qquad |x - 1| < \delta \qquad \text{then} \qquad \left| \frac{2x}{x^2 + 4} - 0.4 \right| < 0.1$$

Solution

A graph of $2x/(x^2 + 4)$ versus x is shown below.

As long as δ is less than about $1 - \frac{2}{3} = \frac{1}{3}$, the distance from 0.4 on the y-axis will be less than 0.1.