

### Exercise Six: Sizing and Spacing

A geometric progression: 1            2            4            8

[Each space in the above should be double the previous.]

Suppose  $y = \sqrt[3]{x}$ . Then, the derivative of  $y$  with respect to  $x$  at  $x = 64$  is written in Leibniz notation as

$$\left. \frac{dy}{dx} \right|_{x=64} = \left. \frac{1}{3x^{2/3}} \right|_{x=64} = \frac{1}{48}$$

A set that's bounded below but has no smallest element is

$$\left\{ 1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \dots \right\} = \left\{ \frac{1}{n} \mid n \in \mathbb{N} \right\}$$

Did you know that  $\lim_{n \rightarrow \infty} \left( 1 + \frac{1}{26n} \right)^{13n} = \sqrt{e}$ ? Well, it does.

Some colleges we know are Colby, Bowdoin, and Bates.