

**Solution to Problem 3)** The length of the (broken) line after the first step will be  $4L/3$ . This number will get multiplied by  $4/3$  after each subsequent step. Therefore, after  $n$  steps, the overall length of the line will be  $(4/3)^n L$ . Note that the length approaches infinity when  $n \rightarrow \infty$ .

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