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- 1. The density of nucleotides per nanometer along a strand of DNA is approximated by the density function  $\rho(x) = 400 3x$ , where x is the number of nanometers measured from one end of the DNA. For this problem, include all units of the quantities you calculate.
  - (a) How many nucleotides are there in the first hundred nanometers of the DNA strand?

(b) What is the average density of the nucleotides for the same piece of DNA?