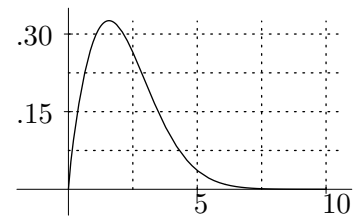


1. [13 points] A common model for the distribution of wind speeds, v , is the Rayleigh distribution. A graph of an example of the Rayleigh distribution is shown in the figure to the right, below.

- a. [2 points] Is this a *probability density function* (PDF) or *cumulative distribution function* (CDF)? Why?



- b. [4 points] What is the meaning of the “5” on the x -axis of this graph? Given that the function value at 5 is 0.037, what is the meaning of the expression $(0.037)(5.01 - 4.99)$?

- c. [3 points] If you identified the figure in (a) as a PDF, sketch the corresponding CDF; conversely, if you identified it as a CDF, sketch the corresponding PDF.

- d. [4 points] Mark the *median* wind-speed on both the graph from (a) (reproduced below), and your graph in part (c). How did you locate the median?

