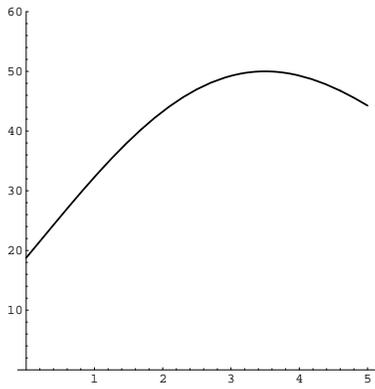
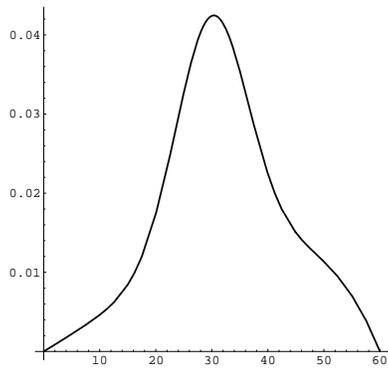


## More Probability

1. (a) The following function represents the temperature outside as a function of time. Estimate the average temperature between time 0 and time 5.



- (b) A meteorologist takes several temperature readings which are described by the following probability density function. Estimate the average temperature.



2. Let  $p(x) = \frac{1}{\sqrt{2\pi}}e^{-x^2/2}$ , a probability density function.

(a) Sketch the graph of this probability density function. What do you think its mean is?

(b) Verify your guess mathematically.

3. The bell curve with mean 0 and standard deviation  $s$  is given by the probability density function  $p(x) = \frac{1}{s\sqrt{2\pi}}e^{-x^2/(2s^2)}$ . What fraction of the population is within one standard deviation  $s$  of the mean 0?