Section 6.1

Average Value
Average value of $f$
on the interval from $a$ to $b$  
\[
= \frac{1}{b - a} \int_a^b f(x) \, dx.
\]
3. (a) Use Figure 6.5 to find $\int_0^6 f(x) \, dx$.
(b) What is the average value of $f$ on the interval $x = 0$ to $x = 6$?

Problem 3
5. (a) Using Figures 6.6 and 6.7, find the average value on $0 \leq x \leq 2$ of

(i) $f(x)$  
(ii) $g(x)$  
(iii) $f(x) \cdot g(x)$

(b) Is the following statement true? Explain your answer.

$$\text{Average}(f) \cdot \text{Average}(g) = \text{Average}(f \cdot g)$$

![Figure 6.6](image1.png)  
![Figure 6.7](image2.png)

Problem 5
The graph below shows the population of McAllen, Texas starting in the year 2000.

Under this model, predict the average population of McAllen between the years 2020 and 2040.

\[ P = 570(1.037)^t \]