Chapter 1: Functions

Worksheet to accompany

David Feldman, *Chaos and Fractals: An Elementary Introduction*,
Oxford University Press, 2012

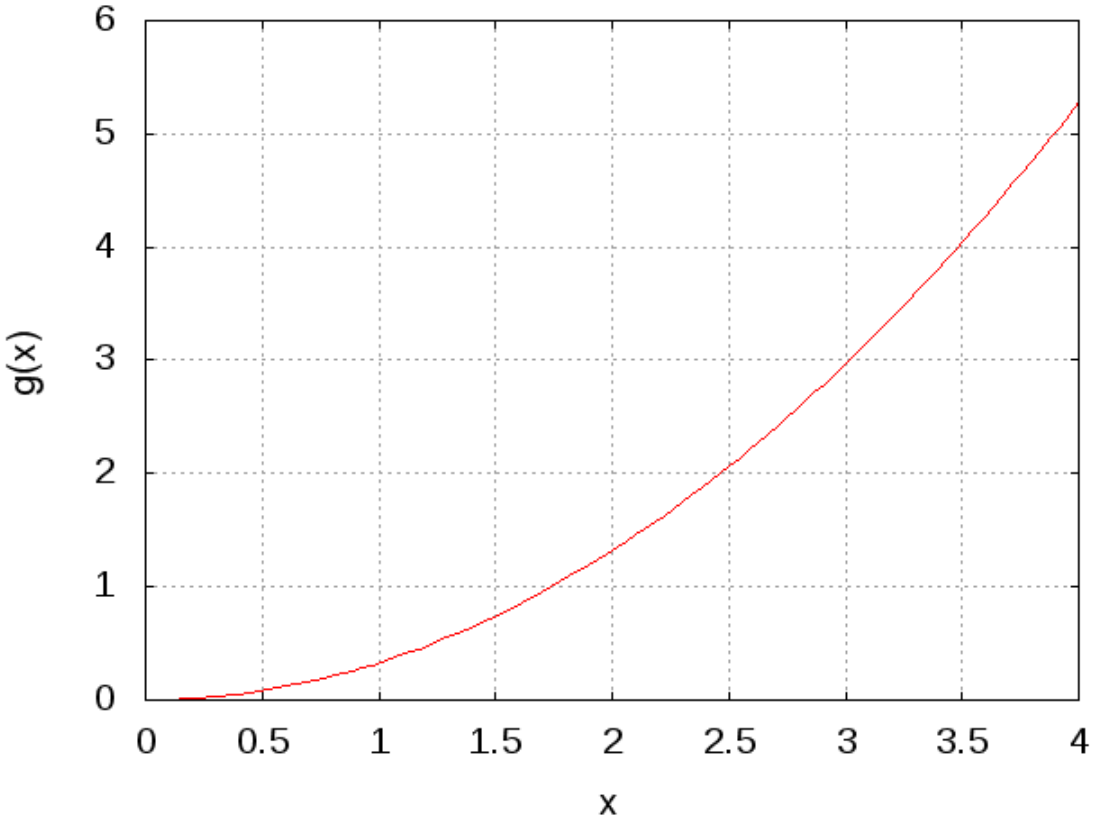

Figure 1: The function $g(x)$.

1. The following problems refer to the function $g(x)$, shown in Fig. 1. Determine approximate values for the following:

   (a) $g(3)$

   (b) $g(2)$

   (c) $g(1)$

   (d) $g(g(2))$

   (e) $g(g(3))$

2. Let $g(x) = x^2 + 3$. Determine values for the following:

   (a) $g(0)$

   (b) $g(2)$

   (c) $g(-2)$

   (d) $g(z)$

   (e) $g(\heartsuit)$

   (f) $g(\hot)$

   (g) $g(g(x))$

3. Let h be a function that takes a number, triples it, and then adds 6.

   (a) Calculate the following:

      i. $h(1)$

      ii. $h(0)$

      iii. $h(-1)$

      iv. $h(-5)$

   (b) Is there any number that does not change after it is "h-ed"? If so, what are some methods you might use to figure find this number?