# Chapter 1.3: More with Inverse Functions
## Calculus I
### College of the Atlantic. Winter 2021

1. Let $g(x) = x + 3$ and $h(x) = x^5$. And let $f(x) = h(g(x))$.

    (a) What is $f(1)$?

    (b) What is $f(x)$?

    (c) What is $f(2x)$?

    (d) What is $f(x + 2)$?

    (e) What is $g^{-1}(x)$?

    (f) What is $h^{-1}(x)$?

2. Which of the following functions are invertible?

    (a) $f(x) = 3x + 2$
    (b) $g(x) = x^2$
    (c) The cost $c$ of $x$ pounds of rice purchased in bulk.
    (d) $h(t)$, the number of hamburgers eaten by Jamie McKown on day $t$, where $t$ is measured in days since January 1, 2010.

3. The yumminess $Q$ of TAB dinners increases quickly during the first three weeks of the term. It then decreases slowly for the rest of the term.

    (a) Sketch a possible graph for $Q(t)$, the quality of TAB dinners as a function of time, where time is measured in weeks since the start of a term.
    (b) Sketch a possible graph for $Q^{-1}(t)$.