Chapter 2 – Section 2.5 Preview of Composite and Inverse Functions

TICKET-IN-THE-DOOR

In order to be prepared for class you must watch the module and complete the following activity. This is due first thing when you get to class.

Check your understanding:
1. The cost C in thousands of dollars of producing q kg of chemical is given by $C = f(q) = 100 + 0.2q$. Find and <u>interpret</u> each of the following:
    a. What is $f(10)$? <u>Interpret</u> $f(10)$ in a complete sentence.

    b. What is $f^{-1}(200)$? <u>Interpret</u> $f^{-1}(200)$ in a complete sentence.

2. The gross domestic product (GDP) of the US is given by $G(t)$ where t is the number of years since 1990 and the units are of G are billions of dollars.
    a. In a complete sentence what is it meant by $G(15) = 12{,}637.4$?

    b. In a complete sentence what is it meant by $G^{-1}(14{,}441.4) = 18$

3. Given $f(x) = 4x^2 - 2$ and $g(x) = -3x + 1$, find $f\big(g(9)\big)$ and $g\big(f(9)\big)$.

4. Let f and g be two invertible functions such that $f^{-1}(x) = (x-3)^3$ and $g(x) = 3x + 2$. Find $f\big(g^{-1}(4)\big)$. Round your answer to two decimal places, if necessary.

2.5