Practice – 1

Once you feel confident with first principles, complete problems 1 to 3. Check your answers by going to the Solutions tab in Moodle.

Instructions: Answer each of the following practice questions on a separate piece of paper. Step by step solutions are provided under the Solutions tab. You will learn the material more thoroughly if you complete the questions before checking the answers.

1.
   a. Find the derivative of $y = x - 3$ using first principles.

   b. What does the derivative represent?

2. Using first principles, find the derivative of $f(x) = 3 - x + 2x^2$.

3. Find the slope of the line tangent to the function $f(x) = x^3 - x$ at $x = 0$.