University of Bahrain
Department of Mathematics
MATHS101: Calculus I
Dr. Abdulla Eid

Homework: The derivative using the definition

Students' Name: _____

1. Using the definition of the limit, find the derivative of $f(x) = 3$. Can you generalize it to any constant function $f(x) = c$?

2. Using the definition of the limit, find the derivative of $f(x) = x$

3. Using the definition of the limit, find the derivative of $f(x) = x^5$? (Hint: Use the first definition of the limit)

4. Using the definition of the limit, find the derivative of $f(x) = \sqrt{x}$

5. Using the definition of the limit, find the derivative of $f(x) = \dfrac{1}{x}$