Chapter 3.2: Derivatives of Exponential Functions
Calculus I
College of the Atlantic. Fall 2014

Determine the derivative of the following functions:

1. $f(x) = 4^x$

2. $f(x) = 5(2)^x$

3. $f(x) = x^2 + 2^x$

4. $f(x) = 17 + 42\sqrt{x} - 9^x$

5. $f(x) = \pi^x + x^\pi + e^x + e^\pi + \pi^e + x^\pi$

6. $f(x) = \frac{2x^3 + xe^x}{x}$

7. $f(x) = xe^x$

A small college is growing at a rate of 4% a year. In 2010 the college has 325 students.

1. What is the rate of growth in 2015?

2. What is the rate of growth in 2020?