

Chapter 3.2: More Derivatives of Exponential Functions

Calculus I

College of the Atlantic. Fall 2016

Determine the derivative of the following functions:

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

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

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

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

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

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

1. Write down a formula for the number of students at the college as a function of t , the number of years since 2010.
2. What is the enrollment of the college in 2015?
3. What is the rate of growth in 2015?