

Mathematics 110 — Assignment 9

Reading: Lecture Notes Sections 7.3, 8.1, and 8.2

Question 1.

Find the area enclosed between the curve $y = x^3 - x^2 + 1$ and the x -axis.

Question 2.

Calculate the area between the graphs of $y = x + 3$ and $y = x^2 + 2x + 2$.

Question 3.

The height of a young sunflower plant increases by 10% each day. At 8am Monday morning we measure its height at 10cm. How high can we expect it to be by 8pm Friday? How long will it take to reach a height of 2 meters?

Question 4.

The probability that a single atom of thorium will decay radio-actively in one year is 9.2×10^{-6} . What is the half-life of thorium? What proportion of a sample of thorium will have decayed 200 years from now?