**Chapter 6 TEST**

**NON-CALCULATOR SECTION**

**Multiple Choice**

1. A) B) C) D)

**Free Responses**

1. Determine whether the function is a solution to the differential equation
2. Solve the differential equations :

a)

b)

c) with
3. a) Sketch the slope field for the differential equation +1

 

b) Use the slope field to sketch the solution that passes through .
4. Match each equation to its slope field :
A : B : C : D :
  

  

1. Evaluate the following integrals :

a)

b)

c)

d)

7. Find the indefinite integral :

a)

b)

c)

d)

e)

**Chapter 6 TEST**

**CALCULATOR SECTION**

**Multiple Choice**

8. A pizza, heated to a temperature of 350 degrees Fahrenheit (oF), is taken out of an oven and placed in a 75oF room at time *t* = 0 minutes. The temperature of a pizza is changing at a rate of degrees Fahrenheit per minute. To the nearest degree, what is the temperature of the pizza at time
*t* = 5 minutes?

A) 112oF B) 119oF C) 147oF D) 238oF E) 335oF

9. If Radium decomposes at a rate proportional to the amount present, then the amount *R* left after *t* years, if *Ro* is present initially and *c* is the negative constant of proportionality, is given by

A) B) C) D) E)

10. According to newton’s law of cooling, the temperature of an object decreases at a rate proportional to the difference between its temperature and that of the surrounding air. Suppose a corpse at a temperature of 32oC arrives at a mortuary where the temperature is kept at 10oC. Then the differential equation satisfied by the temperature *T* of the corpse *t* hours later is

A) B) C) D)

**Free Responses**

11. A population grows continuously at a rate of 1.85%. How long will it take the population to double?

12. Find the balance in an account when $1000 is deposited for 8 years at an interest rate of 4% compounded continuously.