

Professor Robert Smith?, University of Ottawa, MAT1332, Fall 2012
Assignment 1, due Thursday September 20, 5:30pm at the beginning of class.
Late assignments will not be accepted; nor will unstapled assignments.

Student Name _____ Student Number _____

By signing below, you declare that this work was your own and that you have not copied from any other individual or other source.

Signature _____

1. Calculate (a) $\int \frac{1}{3-14t} dt$ and (b) $\int_{-3}^3 (y^7 - 2y^9) dy$.

(a)

(b)

2. Calculate (a) $\int_{-\pi}^{\pi} [x^2 - 30 \cos(x)] dx$ and (b) $3 \int_2^5 \sin(3\pi(x-5)) dx$. Leave your answers in exact form (not a decimal approximation).

(a)

(b)

3. Calculate $\int_0^1 \frac{e^{\arctan x}}{1+x^2} dx$.

4. Calculate $\int_0^\pi x \sin(3x) dx$.

5. Zombies have invaded campus! Initially, there are 5 zombies. They recruit more of the undead to their ghoulish ranks at rate

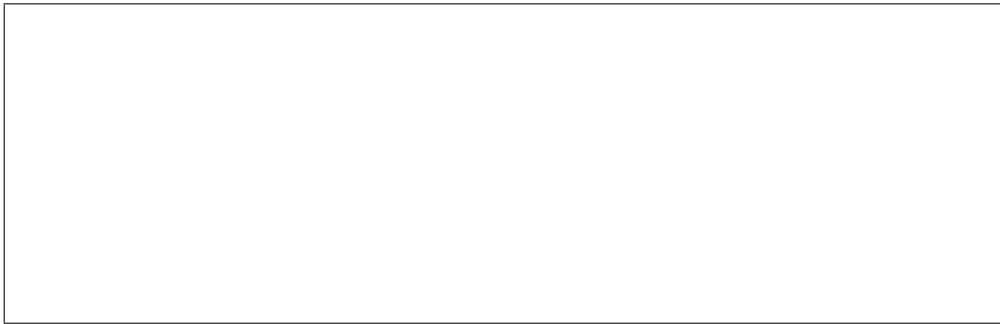
$$\frac{dz}{dt} = 10te^{-0.08t},$$

where t is the time in days and z are the number of zombies.

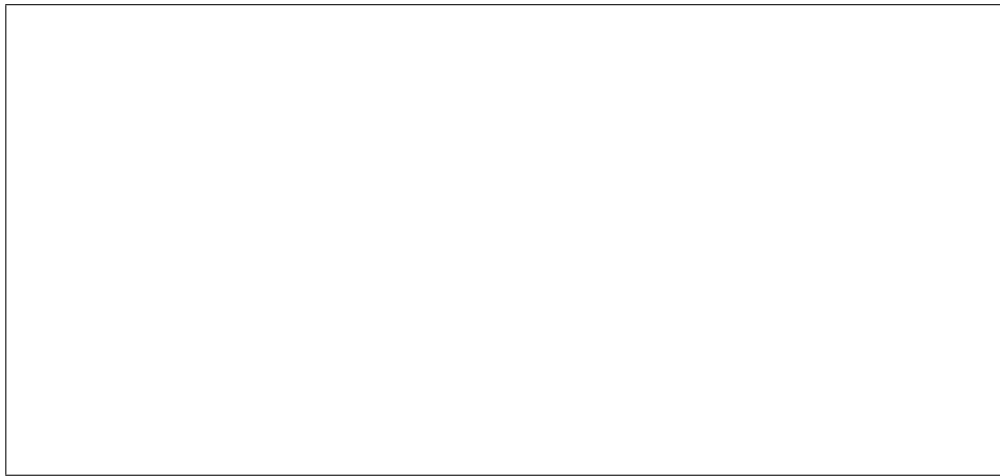
- (a) How many zombies are recruited in the first week?
- (b) How many zombies are recruited during the third week?
- (c) After 50 days, how many zombies are there in total?
- (d) Will zombies eventually infect everyone on campus? If not, how many will be infected eventually?



(a)



(b)



(c)



(d)

