Attendance Quiz for Lecture 19 of Dr. Z.'s Dynamical Models in Biology class

Name: (print!)

Email: (print!)

1. Write the Maple command for the following mathematical expressions

$$\frac{\partial^2 f}{\partial x^2} + \frac{\partial^2 f}{\partial y^2} + \frac{\partial^2 f}{\partial z^2} \quad ,$$

$$\int_{-\infty}^{\infty} \int_{5}^{\infty} e^{-x^2/2 - y^2/2} \, dx \, dy$$

2. Write the Maple command to solve the following system of two differential equations with two unknowns functions, with the given initial conditions

$$\frac{dx}{dt} = 5x + 7y \quad , \quad \frac{dy}{dt} = -5x + 9y \quad , \quad x(0) = 5 \quad , y(0) = 3$$

3. In the Maple package `DMB.txt`

Let's define `A:=proc(x):SSSg(HWg(u,v,[[1,x,1],[1,1,1],[1,1,1]]),[u,v])[1][1]: end:`

that tells you the ultimate fraction of the genotype AA if all matings are equally likely except that the mating of Ae with each other is x times more likely then all the other mating.

How would you plot a graph of `A(x)` from `x=2` to `x=30`.?