09.05.2014.Question 6: Using Euler's Method, we obtain the difference equation $y_{n+1}=y_n+c\Delta t$ to approximate a differential equation. What is the ODE being estimated?

A. $y'=cy$
B. $y'=y+c$
C. $y'=c$
D. $y'=y+c\Delta t$
E. None of the above

09.05.2014.Question 7: Consider the differential equation ***y′=ay+b*** with parameters *a* and *b*.To approximate this differential equation using Euler's Method, what is the difference equation?

(a) $y_{n+1} = ay_n + b$

(b) $y_{n+1} = y_n + ay_n\Delta t + b\Delta t$

(c) $y_{n+1} = ay_n\Delta t + b\Delta t$

(d) $y_{n+1} = y_n\Delta t + ay_n\Delta t + b\Delta t$

(e) None of the above

09.05.2014. Question 8: We have used Euler's Method to approximate the solution to a differential equation with the difference equation $z_{n+1}=1.2z_n$. We know that the function $z(0)=3$. Estimate $z(2)$.

(a) $z(2) \approx 3.6$ (c) $z(2) \approx 5.184$

(b) $z(2) \approx 4.32$ (d) Not enough information is given.

09.08.2014.Question 1: TRUE or FALSE:
“All equations have solutions.”

A. TRUE **B.** FALSE.

09.08.2014. Question 2: TRUE or FALSE:
“Some initial value problems do not have unique solutions.”

A. TRUE **B.** FALSE.

09.08.2014. Question 3: TRUE or FALSE:
“IF an initial value problem has a solution, THEN it is unique.”

A. TRUE **B.** FALSE.