



Answer all the following questions

No. of questions : 2

Total Mark: 20 marks

I) Find the constants of the curve $y = \frac{1}{a \sin x + b \ln x + cx^2}$ that fit (2, 101), (13, 147), (20, 310)

II) Derive the formula to solve the following P.D.E. numerically

$$2U_t = U_{xx} \quad 0 < x < 1, \text{ B.C. : } U(0,t) = 3, U(1,t) = 2, \text{ I.C. : } U(x,0) = 3-x^2, h = 0.25, k = 1.$$

Dr. eng Khaled El Naggar



Answer all the following questions

No. of questions : 2

Total Mark: 20 marks

I) Find the constants of the curve $y = \frac{1}{a \sin x + b \ln x + cx^2}$ that fit (2, 101), (13, 147), (20, 310)

II) Derive the formula to solve the following P.D.E. numerically

$$2U_t = U_{xx} \quad 0 < x < 1, \text{ B.C. : } U(0,t) = 3, U(1,t) = 2, \text{ I.C. : } U(x,0) = 3-x^2, h = 0.25, k = 1.$$

Dr. eng Khaled El Naggar



Answer all the following questions

No. of questions : 2

Total Mark: 20 marks

I) Find the constants of the curve $y = \frac{1}{a \sin x + b \ln x + cx^2}$ that fit (2, 101), (13, 147), (20, 310)

II) Derive the formula to solve the following P.D.E. numerically

$$2U_t = U_{xx} \quad 0 < x < 1, \text{ B.C. : } U(0,t) = 3, U(1,t) = 2, \text{ I.C. : } U(x,0) = 3-x^2, h = 0.25, k = 1.$$

Dr. eng Khaled El Naggar