

Quiz 2 Form A  
Sept 15, 2016

[10] 1i. Suppose \$75 is invested at an annual rate of return  $r$  compounded continuously. State the initial value problem describing the amount of money after  $t$  years.

Differential equation: \_\_\_\_\_

Initial Value: \_\_\_\_\_

1ii. Circle the general solution to the differential equation in problem 1:

A.)  $y = \ln|rt| + C$       B.)  $y = C\ln|rt|$       C.)  $y = e^{rt} + C$       D.)  $y = Ce^{rt}$

1iii. Circle the solution to the initial value problem in problem 1:

A.)  $y = \ln|rt| + 75$       B.)  $y = 75\ln|rt|$       C.)  $y = e^{rt} + 75$       D.)  $y = 75e^{rt}$

[10] 2.) Suppose water containing 3 lbs of salt per gallon enters and leaves a tank at a rate of 8 gallons/hour. Suppose the tank originally contains 7 lbs of salt in 500 gallons of water. State the initial value problem describing the amount of salt in the tank at time  $t$ . Do NOT solve.

Differential equation: \_\_\_\_\_

Initial Value: \_\_\_\_\_