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| **Question I**  A. For the differential equation  answer the following  (i) Classify the differential equation by type, order and linearity.  (ii) Verify that the expression  is an implicit solution of the differential equation.      **Question III**: A. Solve the following differential equations    (2) = 4  B. Solve the Initial Value Problem  Good Luck☺ |
| (iii) Find an explicit solution  (iv) Give the interval I of definition of the explicit solution in (iii). (Bonus Question)  B. Determine the region of the for which the differential equation has a unique solution  **Question II:** Solve the following differential equations  1.    2.  3.  **Question III**:  Show that the following differential equation is exact. Then solve the initial value problem |

Good Luck ☺