**IB Math HL1 : Differential Equation WS #2**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_**

1. Find a general solution to the differential equation; .

2. Solve  given that .

3. Given that  and, find k.

4. Water flows from a hole in the base of a cylindrical can at a rate given by  where **** and h is the depth the of water in the vessel at time t. If the level of water in the can falls from 100 cm to 25 cm in two minutes, how much longer will it take for the can to empty?

5. Solve the differential equation , if  and 