**MERIT and EXCELLENCE in DIFFERENTIAL EQUATIONS.**

1. Solve  given  

2. Solve  given when 

3. Solve  given  

4. Find the general solution of  

5. The velocity in m/s of a skydiver increases at a rate given by 

a) Solve the differential equation to find at time  given **** at 

b) Find  at 

c) Find  at 

c) Find the **limit** of as  increases (sometimes called the “terminal velocity”)

6. Water leaks out of a tank. The **rate is proportional to the square root of the volume** of

 the water remaining.

At   and at day, 

Find a formula for  at time days and use it to find how long it takes to empty completely.

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