

King Fahd University of Petroleum and Minerals
Math. & Stat. Department
171-Math 202 Quiz (1)

Name	ID	SEC
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Q1) Determine and sketch the region in the plane such that for any point (x_0, y_0) the differential equation $y' = \sqrt{x^2 - 1}\sqrt{y^2 - 1}$ has a unique solution passing through (x_0, y_0) .

Q2) Verify that the family of functions $y = \frac{ce^x}{1 - ce^x}$ is one parameter family of solutions of the DE $\frac{dy}{dx} = y^2 + y$. Find a singular solution.

Q3) Solve the differential equation $\frac{dy}{dx} = \frac{xe^x}{\sin y}$.