Faculty of Engineering (Shoubra)
Engineering Mathematics and Physics Department

$5^{\text {th }}$ Quiz

Student Name in Arabic:
B. $\mathbf{N}^{\mathbf{O}}$ Section:

1-Solve the following differential equation

$$
\frac{d y}{d x}=\frac{x y}{x^{2}+y^{2}} \quad \frac{d y}{d t}=1+t^{2}+y^{2}+t^{2} y^{2} \quad \frac{d y}{d x}=\frac{2 x+3 y+7}{4 x+6 y+28}
$$

2- Find the first and second derivatives for the function

$$
x \cos (x y)+e^{x y}=0
$$

3- Find all relative extrema and saddle points for

$$
f(x, y)=3 x^{2}+y^{2}+9 x-4 y+6
$$

