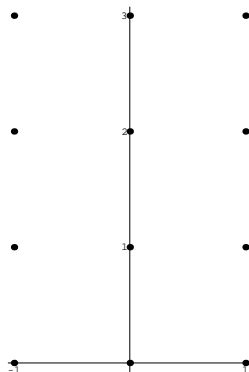


You MAY NOT use your calculators.

Consider the differential equation $\frac{dy}{dx} = x^2(y - 1)$.

- (a) On the axes provided, sketch a slope field for the given differential equation at the twelve points indicated.



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- (b) While the slope field in part (a) is drawn at only twelve points, it is defined at every point in the xy -plane. Describe all points in the xy -plane for which the slopes are positive.

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- (c) Find the particular solution $y = f(x)$ to the given differential equation with the initial condition $f(0) = 3$.