Creating Slope Fields

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To sketch a slopefield:

1. Select any ordered pair and write in a table with three columns named *x*, *y*, *dy/dx*.
2. Substitute the pairs you chose in the table into the DE to compute the slope at numerous points.
3. Construct short line segments on the dots to approximate the slope of the tangent line or the solutions at those points.
4. For a particular solution, sketch in the curve using the initial condition and guided by the tangent lines.

**(FR) 1. 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.

b) Describe all points in the *xy*-plane for which the slopes are positive.

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

x	y	dy/dx