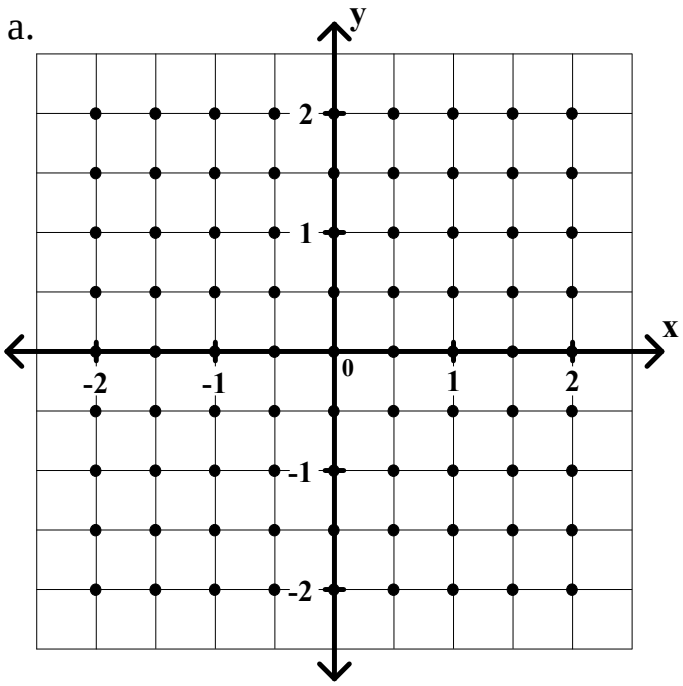
Calculus Class Worksheet #3 Unit 12 page 1 _____

In the following problem, you are given a differential equation and a point. Do each of the following. Show your work in the space provided.

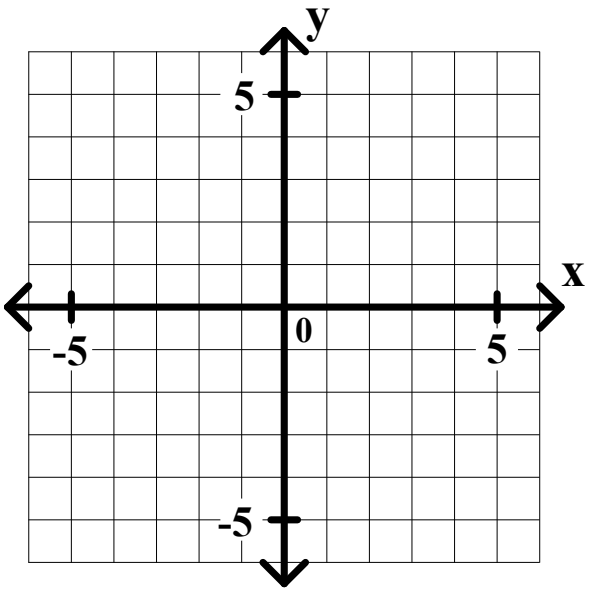
a. Sketch a slope field on the axes provided at the indicated points.
b. Find the general solution of the differential equation.
c. Find the specific solution that would contain the given point.
d. Graph the specific solution.

1. $\frac{dy}{dx} = xy^2$; **(-1, 2)**

a.



d.



b. _____

c. _____

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Find the general solution of each of the following differential equations. Then find the specific solution that would contain the given point.

2. $dy/dx = x^2y$; $(3, e)$

3. $ydy + xdx = 0$; $(-3, -4)$

4. $dy = x\sqrt{y}\,dx$; $(4, 1)$

5. $dy/dx = 0.06y$; $(0, 100)$