

Math 152

February 24, 2009

Quiz #5 B

Name _____

(please print)

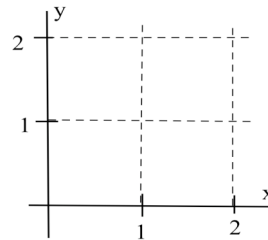
Show Your Work!

Good Luck!

1. Sketch small "direction arrows" for the differential equation $\frac{dy}{dx} = y' = x^2 - 2y$ at the three points

(1, 1), (2, 1) and (2, 2).

(3)

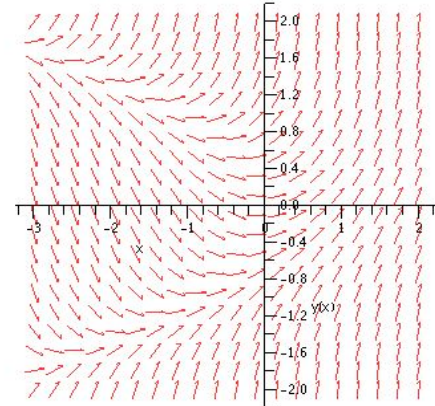


2. The figure shows the direction field for a differential equation

Sketch the solutions of the DE that go through the points

A on the graph and (-1, -2) (answer is two curves)

(4)



3. Solve $\frac{dy}{dx} = 8x^3 + 4x - 2$ $y(1) = 7$.

$y =$ _____

(4)

4. Solve $\frac{dy}{dx} = \frac{2 \cos(x) + e^x}{2y}$ $y(0) = 5$. $y =$ _____

(4)

5. Solve $\frac{dy}{dt} = 3y$ $y(0) = 17$. $y =$ _____

(2)

6. $\frac{dP}{dt} = 3 \cdot P \cdot \left(1 - \frac{P}{11}\right)$. For which value(s) of P is $\frac{dP}{dt} = 0$? $P =$ _____

(2)

7. Which project did John von Neumann **NOT** work on? a b c d e

(1) (a) quantum mechanics (b) atomic bomb (c) statistics (d) game theory (e) computers