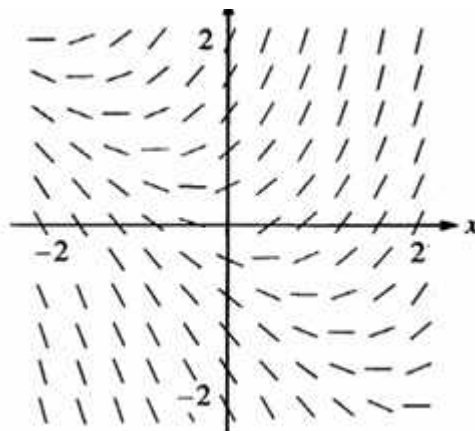


Take Home TEST: 4.4 – 5.1 All integration techniques and Differential Equations
 NO CALCULATOR PERMITTED

Part I: Multiple Choice:

_____ 1. (no work needed) Shown at right is a slope field for which of the following differential equations?

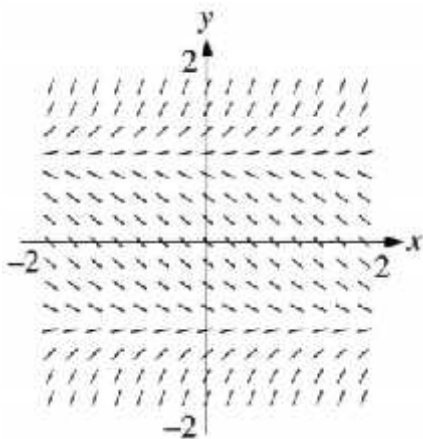
- (A) $\frac{dy}{dx} = 1 + x$ (B) $\frac{dy}{dx} = x^2$ (C) $\frac{dy}{dx} = x + y$ (D) $\frac{dy}{dx} = \frac{x}{y}$
 (E) $\frac{dy}{dx} = \ln y$



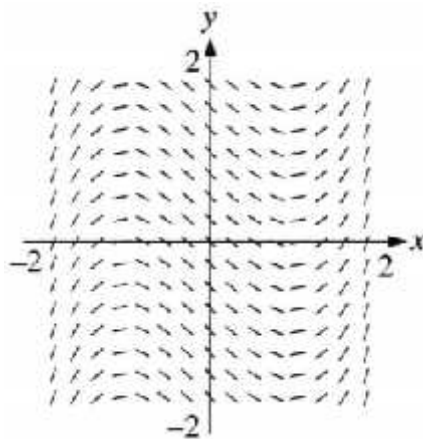
_____ 2. (no work needed) Which of the following could be the slope field for the differential equation

$$\frac{dy}{dx} = y^2 - 1?$$

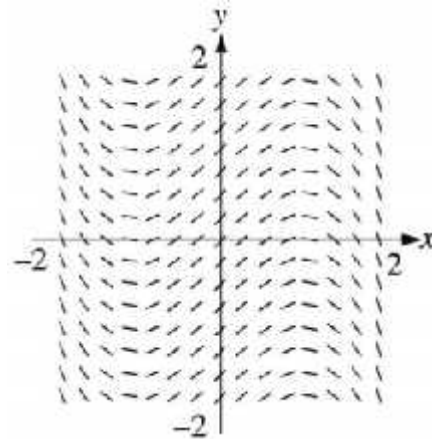
(A)



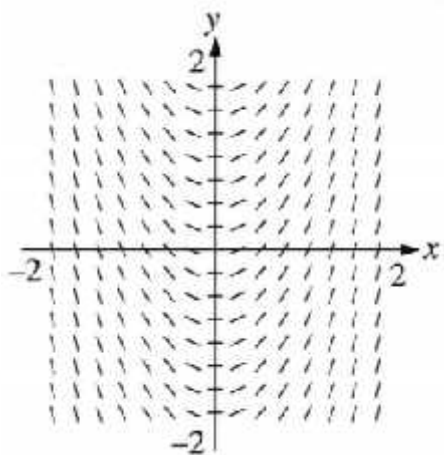
(B)



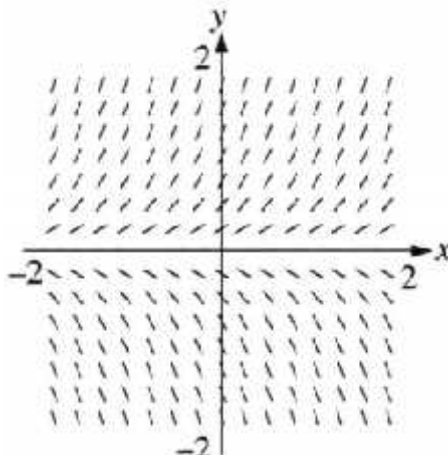
(C)



(D)



(E)



Part II: Short Answer—Evaluate the following indefinite integrals. **Simplify your coefficients! Don't forget +C . Do all work in the space provided below each problem.**

$$3. \int \frac{9}{\sqrt{25-4x^2}} dx =$$

$$4. \int \frac{9x}{\sqrt{25-4x}} dx =$$

$$5. \int \frac{9x}{\sqrt{25-4x^2}} dx =$$

$$6. \int 5 \sec^2 x \cdot e^{\tan x} dx =$$

$$7. \int 2x^2 (2x^3 + 5)^4 dx =$$

$$8. \int \frac{4}{x\sqrt{(\ln x)^5}} dx =$$

$$9. \int 7x \csc(2x^2) dx =$$

$$10. \int \frac{4}{x^2 - 14x + 49} dx =$$

$$11. \int \frac{x-7}{x^2 - 14x + 48} dx =$$

Read and Sign to acknowledge the following statement:

I completed this test on my own without any help from others. I am an honest and upright student with impeccable integrity who eschews academic dishonesty, chicanery, corruption, perfidiousness, double-dealing fraudulence, and cunning improbity. I also LOVE math!

X _____
Your Signature