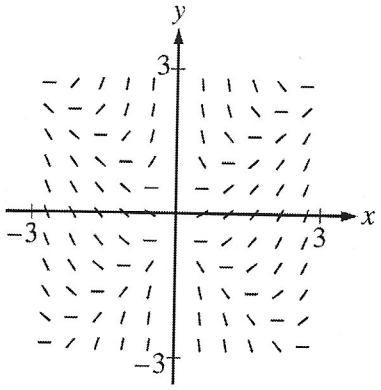

13. Shown above is a slope field for which of the following differential equations?

(A) $\frac{dy}{dx} = \frac{x^2 - y^2}{x}$

(B) $\frac{dy}{dx} = \frac{x^2 - y^2}{y}$

(C) $\frac{dy}{dx} = x^2 - y^2$

(D) $\frac{dy}{dx} = \frac{x^2 + y^2}{x}$

(E) $\frac{dy}{dx} = x^2 + y^2$

16. Let $y = f(x)$ be the solution to the differential equation $\frac{dy}{dx} = x - y$ with initial condition $f(1) = 3$. What is the approximation for $f(2)$ obtained by using Euler's method with two steps of equal length starting at $x = 1$?

(A) $-\frac{5}{4}$ (B) 1 (C) $\frac{7}{4}$ (D) 2 (E) $\frac{21}{4}$

x	$f'(x)$
1	0.2
1.5	0.5
2	0.9

83. The table above gives values of f', the derivative of a function f. If $f(1) = 4$, what is the approximation to $f(2)$ obtained by using Euler's method with a step size of 0.5 ?

(A) 2.35

(B) 3.65

(C) 4.35

(D) 4.70

(E) 4.80

24. Which of the following is the solution to the differential equation $\frac{dy}{dx} = -2xy$ with the initial condition $y(1) = 4$?

(A) $y = e^{x^2} + 4 - e$

(B) $y = e^{-x^2} + 4 - \frac{1}{e}$

(C) $y = 4e^{x^2-1}$

(D) $y = 4e^{-x^2+1}$

(E) $y = e^{-x^2+16}$