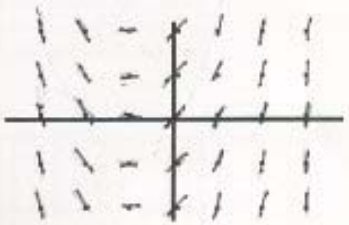
SLOPE FIELDS

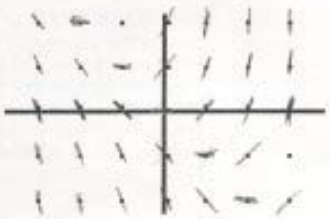
Draw a slope field for each of the following differential equations.

1. $\frac{dy}{dx} = x + 1$

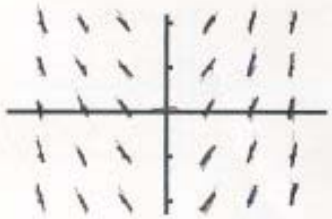


2. $\frac{dy}{dx} = 2y$

3. $\frac{dy}{dx} = x + y$



4. $\frac{dy}{dx} = 2x$

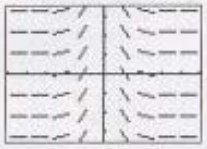


5. $\frac{dy}{dx} = y - 1$

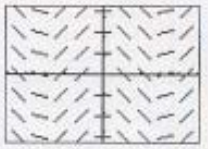
6. $\frac{dy}{dx} = -\frac{y}{x}$

Match each slope field with the equation that the slope field could represent.

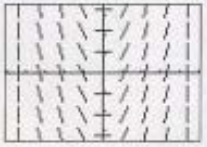
(A)



(B)



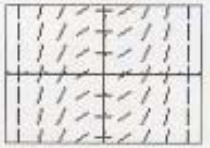
(C)



(D)

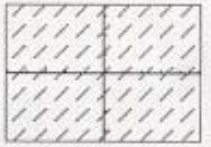
(E)

(F)



(G)

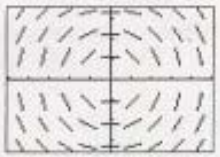
(H)



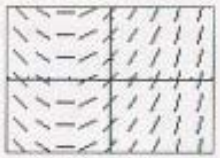
7. $y = 1$ D
8. $y = x$ H
9. $y = x^2$ C
10. $y = \frac{1}{6}x^3$ F
11. $y = \frac{1}{x^2}$ A
12. $y = \sin x$ E
13. $y = \cos x$ B
14. $y = \ln|x|$ G

Match the slope fields with their differential equations.

(A)

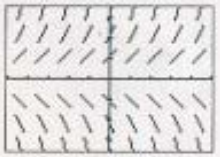


(B)



(C)

(D)



15. $\frac{dy}{dx} = \frac{1}{2}x + 1$ B

16. $\frac{dy}{dx} = y$ D

17. $\frac{dy}{dx} = x - y$ C

18. $\frac{dy}{dx} = -\frac{x}{y}$ A

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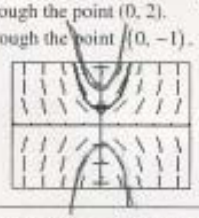
19. The calculator drawn slope field for the differential equation $\frac{dy}{dx} = xy$ is shown in the figure below. The solution curve passing through the point $(0, 1)$ is also shown.
(a) Sketch the solution curve through the point $(0, 2)$.
(b) Sketch the solution curve through the point $(0, -1)$.



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20. The calculator drawn slope field for the differential equation $\frac{dy}{dx} = x + y$ is shown in the figure below.
(a) Sketch the solution curve through the point $(0, 1)$.
(b) Sketch the solution curve through the point $(-3, 0)$.