

Worksheet #12

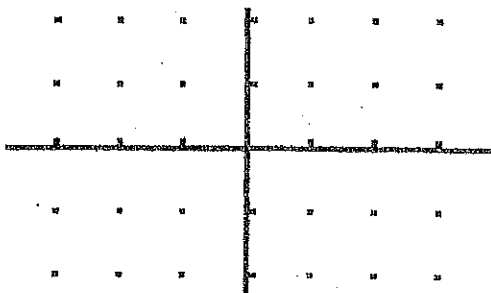
Name: _____

Per: _____ Group: _____

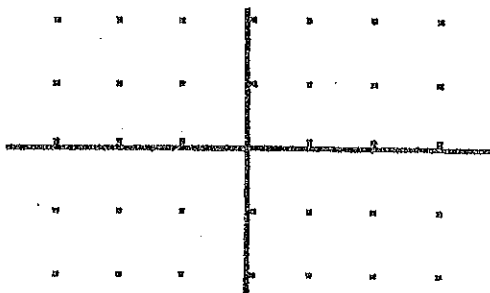
Slope Fields

Draw a slope field for each of the following differential equations. Each tick mark is one unit.

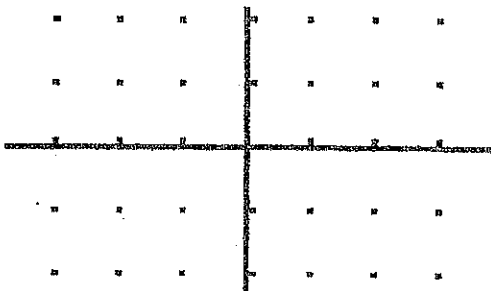
1. $\frac{dy}{dx} = x+1$



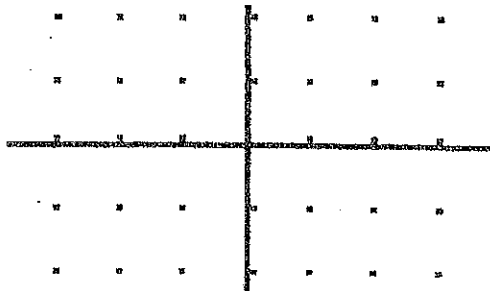
2. $\frac{dy}{dx} = 2y$



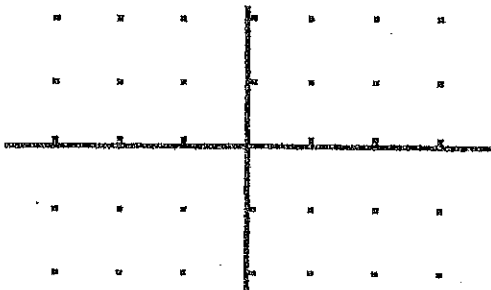
3. $\frac{dy}{dx} = x+y$



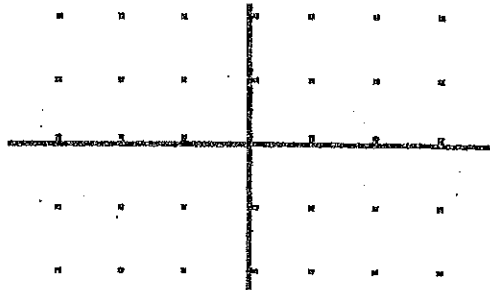
4. $\frac{dy}{dx} = 2x$



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

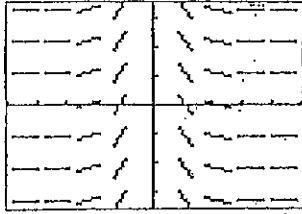


6. $\frac{dy}{dx} = -\frac{y}{x}$

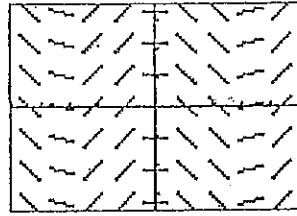


Match each slope field with the equation that the slope field could represent.

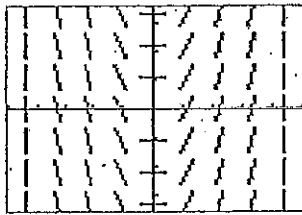
(A)



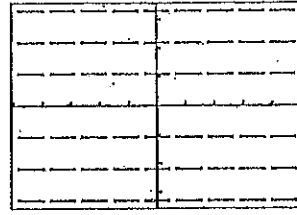
(B)



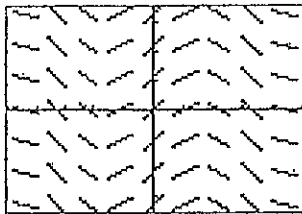
(C)



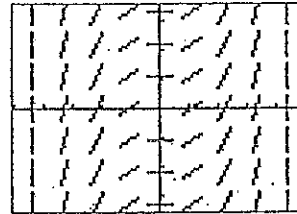
(D)



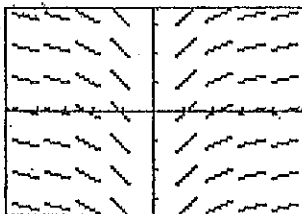
(E)



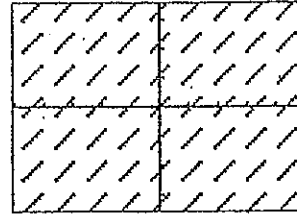
(F)



(G)



(H)



7. $y = 1$

9. $y = x$

11. $y = x^2$

13. $y = \frac{1}{6}x^3$

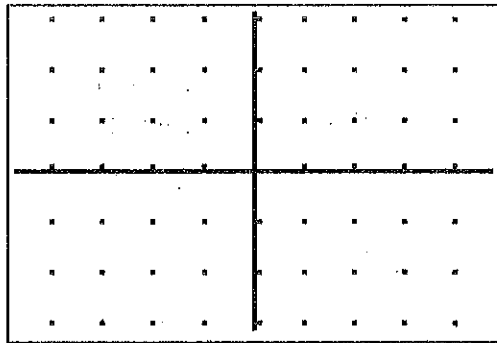
8. $y = \frac{1}{x^2}$

10. $y = \sin x$

12. $y = \cos x$

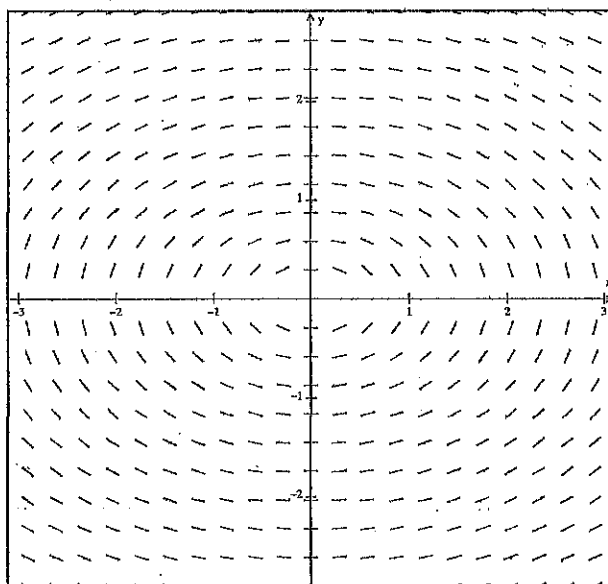
14. $y = \ln|x|$

Worksheet #13



1. If $\frac{dy}{dx} = \frac{1}{x+2}$, sketch the slope field.

2. The graph below shows the slope field for the differential equation $\frac{dy}{dx} = \frac{-4x}{9y}$.

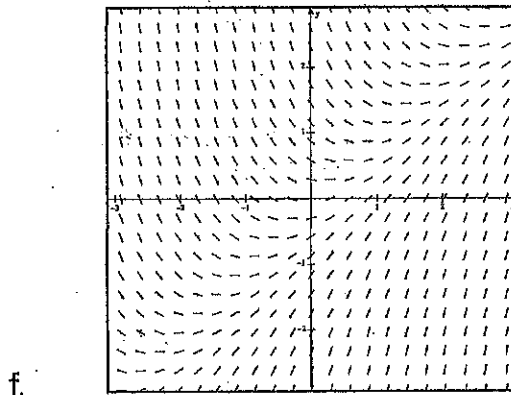
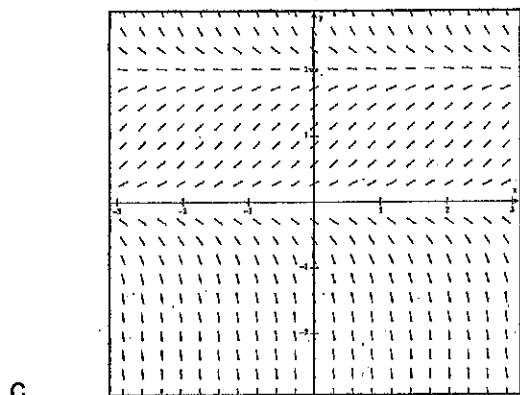
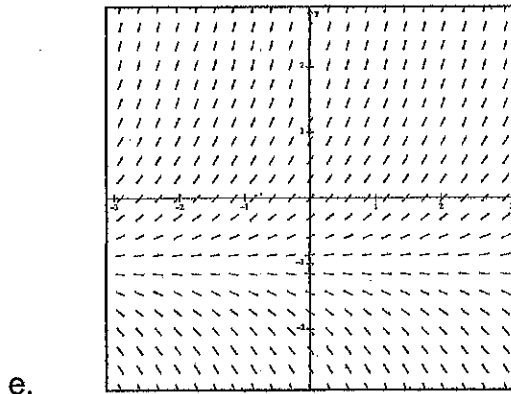
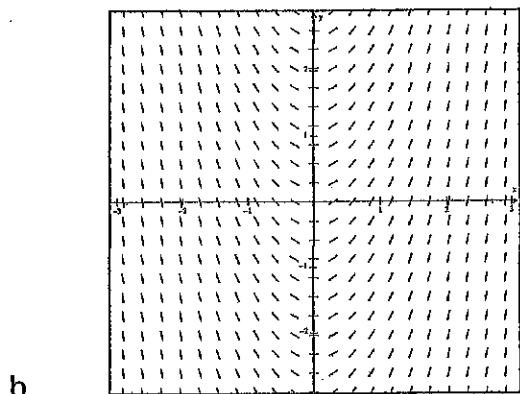
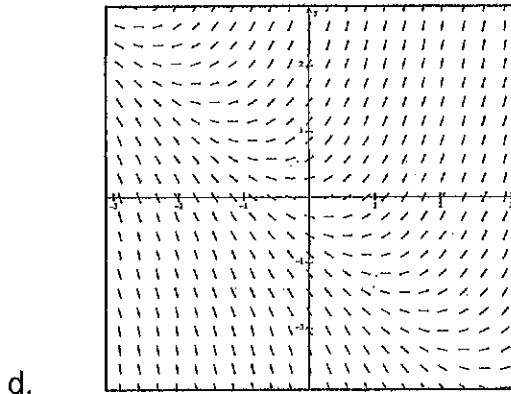
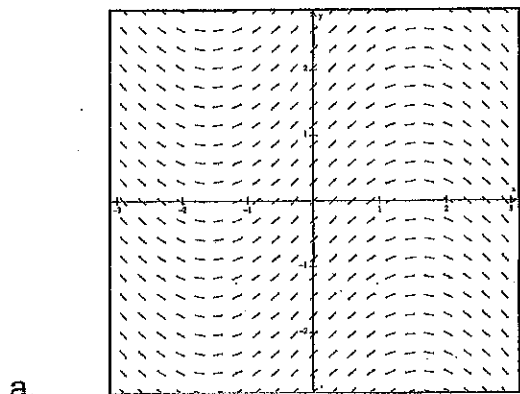


- Calculate the slope at the point $(2, -1)$. Mark this point on the graph. Does the calculated slope seem reasonable? Explain.
- Starting at the point $(0, 2)$, sketch the path of the relation that contains that point. Where does the graph seem to go after it touches the x -axis? What geometric shape does the figure seem to resemble?
- Solve the differential equation algebraically. Find the unique function $y = f(x)$ that contains the point $(0, 2)$. Does this equation agree with your guess in part b?

Calculus AB
Slope Fields

Below are six examples of slope fields.

1. Draw in 4 solution curves for each.
2. Match them with the correct equation. Explain each choice.



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

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

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

4. $\frac{dy}{dx} = 1 + y$

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

6. $\frac{dy}{dx} = y(2 - y)$