

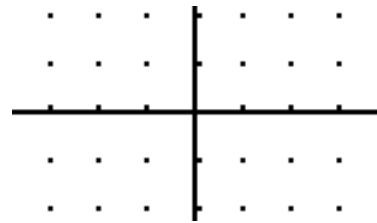
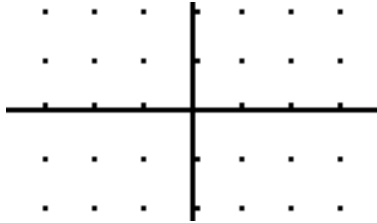
Review 6.1-6.3

Sketch the following slope fields.

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

2. $\frac{dy}{dx} = 3y$

3. $\frac{dy}{dx} = 2xy$



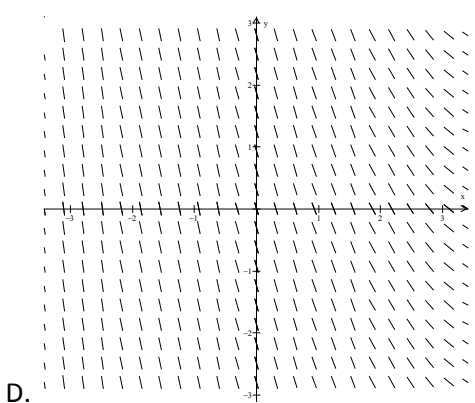
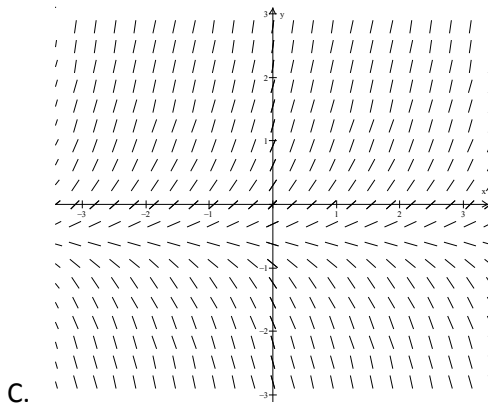
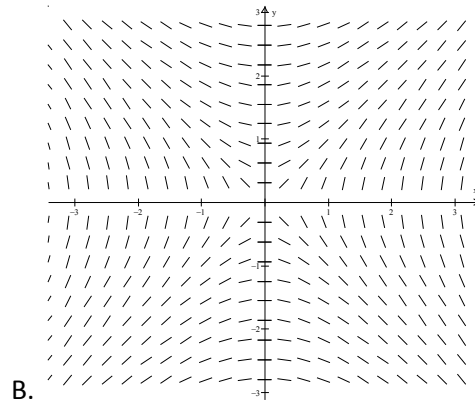
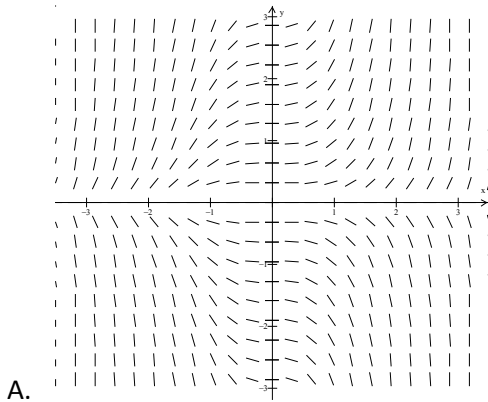
Match the following graphs with the differential equations.

_____ 4. $\frac{dy}{dx} = \frac{x}{y}$

_____ 6. $\frac{dy}{dx} = 2y + 1$

_____ 5. $\frac{dy}{dx} = x - 4$

_____ 7. $\frac{dy}{dx} = x^2 y$



Solve the differential equation.

8. $\frac{dy}{dx} = x + 2$

10. $y' = \frac{5x}{y}$

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

11. $y' = \sqrt{xy}$

12. $(1 + x^2)y' - 2xy = 0$

Find the particular solution that satisfies the initial condition.

13. $y(x+1) + y' = 0, \quad y(-2) = 1$

15. $\frac{du}{dv} = uv \sin v^2, \quad u(0) = 1$

14. $y\sqrt{1-x^2}y' - x\sqrt{1-y^2} = 0, \quad y(0) = 1$

Evaluate the integral.

16. $\int \frac{5}{(x-1)(x+4)} dx$

17. $\int \frac{2x+1}{x^2+x-2} dx$

18. $\int \frac{x^3-5}{x^2-1} dx$

Solve the differential equation.

19. $\frac{dy}{dx} = \frac{8x-3}{2x^2-x}$

20. $F'(x) = \frac{7x-3}{x^3+2x^2-3x}$