

# Corrective Assignment

Solve the differential equation.

1.  $\frac{dy}{dx} = -\frac{2x}{y}$

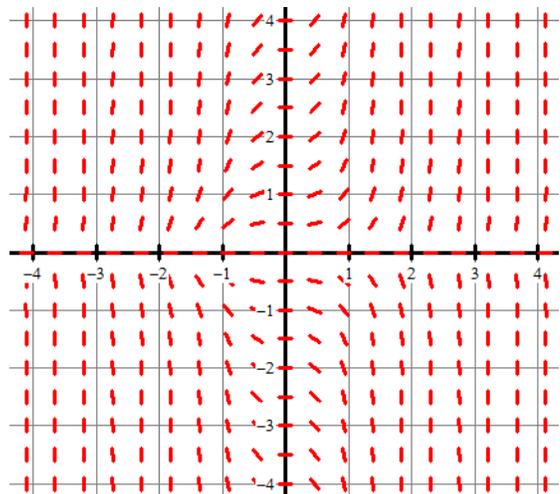
2.  $\frac{dy}{dx} = y^2 \sin x$

3.  $\frac{dy}{dx} = y(x + 2)$

Find the solution that satisfies the given condition.

4.  $\frac{dy}{dx} = 2x^2y$  and  $y = 1$  when  $x = 3$

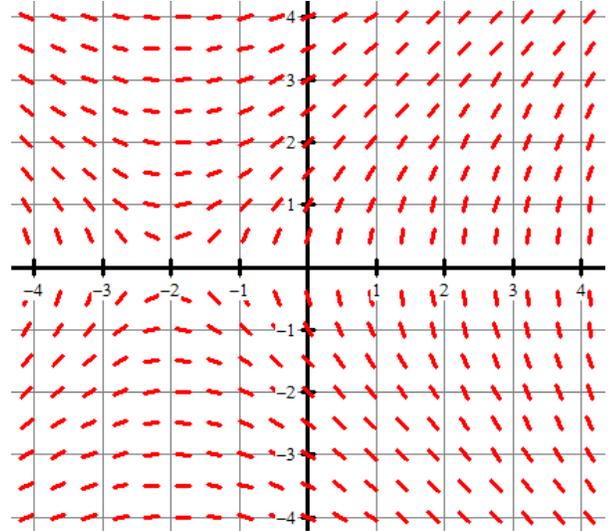
5. The slope field of  $\frac{dy}{dx} = 2x^2y$  from question #4 is shown below. Draw the particular solution  $y = f(x)$  when  $f(3) = 1$  that you found in question #4 on the slope field.



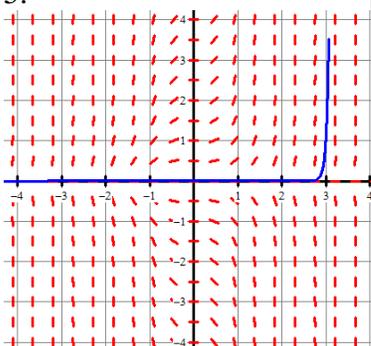
Find the solution that satisfies the given condition.

6.  $\frac{dy}{dx} = \frac{x+2}{y}$  and  $y = -2$  when  $x = -3$

7. The slope field of  $\frac{dy}{dx} = \frac{x+2}{y}$  from question #6 is shown below. Draw the particular solution  $y = f(x)$  when  $f(-2) = -3$  that you found in question #6 on the slope field.



## ANSWERS TO CORRECTIVE ASSIGNMENT

1. $y = \pm\sqrt{-2x^2 + c}$	2. $y = \frac{1}{\cos x + c}$	3. $y = e^{\frac{1}{2}x^2 + 2x + c}$ which turns into $y = Ce^{\frac{1}{2}x^2} e^{2x}$	4. $y = e^{\frac{2}{3}x^3 - 18}$ which turns into $y = \frac{1}{e^{18}} e^{\frac{2}{3}x^3}$
5. 	6. $y = -\sqrt{x^2 + 4x + 7}$	7. 