

Review

Wednesday, June 17, 2015
3:11 PM

Solve the following DE:

$$\frac{dy}{dx} + 2xy^2 = 0$$

$$\frac{dy}{y^2} + 2x dx = 0$$

now integrate:

$$\int y^{-2} dy + \int 2x dx = \int 0$$

$$\frac{y^{-1}}{-1} + x^2 = C$$

$$\boxed{-y^{-1} + x^2 = C}$$

acceptable answer #1
(general solution)

explicit soln (solve to y):

$$-\frac{1}{y} + x^2 = C$$

$$x^2 - C = \frac{1}{y}$$

$$y = \frac{1}{x^2 - C}$$