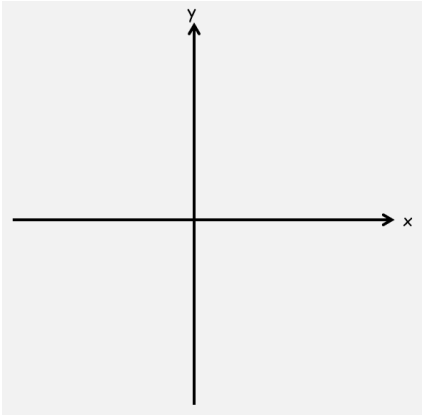
7A Part 1 First Order Differential Equations 2.0

1. Find the general solution of the differential equation, then sketch members of the family of solution curves represented by the general solution.

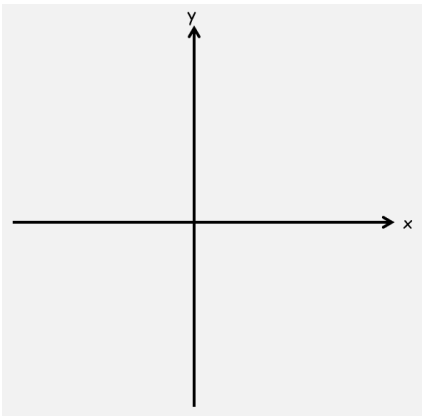
a)

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



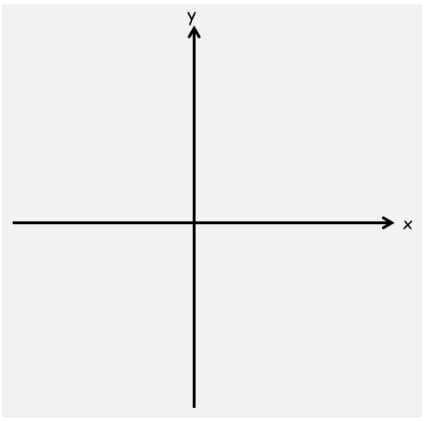
b)

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



c)

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



Product Rule Examples (The new stuff)

2. Find the general solution of the following equation:

a)

$$x^3 \frac{dy}{dx} + 3x^2 y = sinx$$

b)

$$6x^2 y \frac{dy}{dx} + 6xy^2 = sec^2 x$$

c)

$$\frac{dy}{dx} + \frac{2y}{x} = \frac{5}{4x^2}$$