**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.

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



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



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



Product Rule Examples (The new stuff)

1. Find the general solution of the following equation:

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

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

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