Differential Equations NAME:
Separable and Linear Differential Equations Practice

Show your work and circle your final answers.

1. Solve the initial value problem for this separable equation.

$x^2 dx + 2y dy = 0, \quad y(0) = 2$

2. Obtain a general solution to the linear differential equation.

$$x\frac{dy}{dx}+3\left(y+x^2\right)=\frac{\sin x}{x}$$