6.1 Slope Fields and Euler's Method

Find the general solution to the exact differential equation.

Ex 1) $\frac{dy}{dx} = 2x$ $\quad y =$

Ex 2) $\frac{dy}{dx} = \sec(x)\tan(x) - e^x$ $\quad y =$

Ex 3) $\frac{dy}{dx} = \frac{1}{x} - \frac{1}{x^2}$ $\quad y =$

Find the general solution to the exact differential equation.

Ex 4) $\frac{dy}{dx} = 2x(\cos x^2)$ $\quad y =$

Ex 5) $\frac{dy}{dx} = \sec^2 x + 2x + 5$ $\quad y =$

Ex 6) $\frac{dy}{dx} = e^x - 6x^2$ $\quad y =$

Solve the initial value problem.

Ex 7) $\frac{dy}{dx} = 2\cos(x)$ $y =$

$y = 3, x = 0$

Ex 8) $\frac{dy}{dx} = 2e^x - \cos x$ $y =$

$y = 3, x = 0$

Solve the initial value problem.

Ex 9)

$\frac{dy}{dx} = 10x^9 + 5x^4 - 2x + 4$ $y =$

$f(1) = 6$

Ex 10)

$\frac{dy}{dx} = \frac{1}{x^2} - \frac{2}{x^3}$ $y =$

$f(1) = 4$