1. Given the differential equation $\frac{dy}{dx} = \frac{1}{x+2}$ and $y(0) = 1$. Find an approximation of $y(1)$ using Euler's Method with two steps and step size $\Delta x = 0.5$.

2. Given the differential equation $\frac{dy}{dx} = x + y$ and $y(1) = 3$. Find an approximation of $y(2)$ using Euler's Method with two equal steps.

3. The curve passing through (2, 0) satisfies the differential equation $\frac{dy}{dx} = 4x + y$. Find an approximation to $y(3)$ using Euler's Method with two equal steps.

4. (Acorn Book) Let $y = f(x)$ be the solution to the differential equation $\frac{dy}{dx} = \arcsin(xy)$ with the initial condition $f(0) = 2$. What is the approximation for $f(1)$ if Euler's Method is used, starting at $x = 0$ with a step size of 0.5?

(A) 2 (B) $2 + \frac{\pi}{6}$ (C) $2 + \frac{\pi}{4}$ (D) $2 + \frac{\pi}{2}$ (E) 3

5. Assume that f and f' have the values given in the table. Use Euler's Method to approximate the value of $f(4.4)$.

x	4	4.2	4.4
$f'(x)$	-0.5	-0.3	-0.1
$f(x)$	2		