

4. [10 points] Consider the solution curve $y(x)$ to the differential equation $\frac{dy}{dx} = 1 + xy^2$ that goes through the point $(1, 1)$.

(a) [2 points of 10] Is this differential equation separable? Explain in one or two sentences.

(b) [5 points of 10] Use Euler's Method with three steps to approximate y when $x = 1.6$.

(c) [3 points of 10] Do you expect the real value of $y(1.6)$ to be greater than or less than the estimate you found in part (b)? Why?