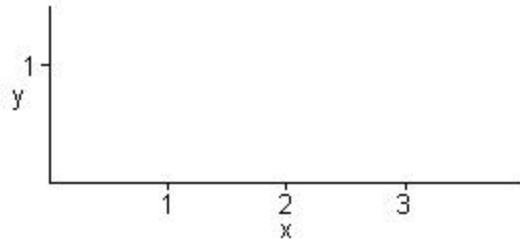


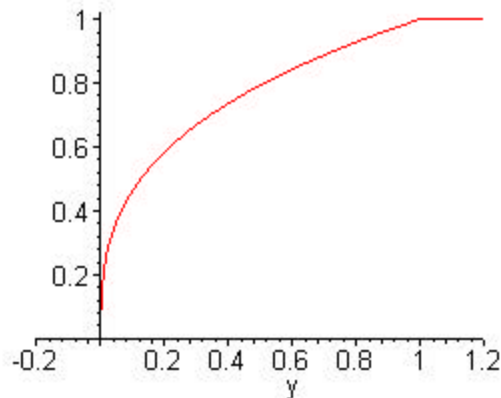
I. The pdf for a discrete random variable X is given by $f_X(x) = \begin{cases} 1/3, & x = 1, 2, 3 \\ 0, & \textit{elsewhere} \end{cases}$. Find the cumulative distribution function (cdf) for f_X , i.e. find $F_X(x)$ and graph it on the axes below. (8 points)



II. Use the cdf for a random variable Y given by $F_Y(y) = \begin{cases} 0, & y < 0 \\ \sqrt[3]{y}, & 0 \leq y < 1 \\ 1, & y \geq 1 \end{cases}$ to answer the following

questions. A graph of $F_Y(y)$ is given for your reference below.

(a) Find the pdf, $f_Y(y)$, for Y . (6 points)



(b) Find $P(Y \leq 1/8)$. (3 points)

(c) Find $P(8/27 \leq y \leq 2)$. (3 points)

Halloween Bonus ☺! What was the best Halloween costume you ever wore? In addition to the costume description, give your age when you wore it. (1 point)