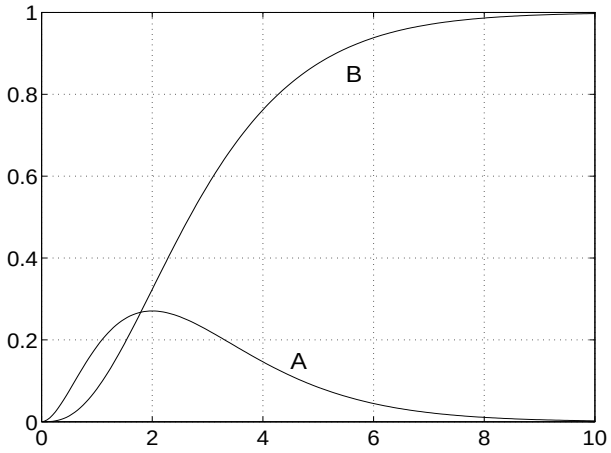
1. (10 points) The figure shows the graphs of two functions, A and B, one of which is a probability density function and the other of which is the corresponding cumulative distribution function.
(a) Which curve represents the density function and which represents the cumulative distribution function?

B is the cumulative density function and A is the probability density function.

(b) Put reasonable values on the tick marks on each of the axes.



2. (8 points) The radius of convergence of the power series $\sum_{n=0}^{\infty} \frac{3^n x^{2n}}{n+1}$ is $R =$ $\sqrt{\frac{1}{3}}$.
(Show your work and/or explain your reasoning.)

We use the ratio test to find the radius of convergence of this power series.

$$\begin{aligned} \lim_{n\to\infty} \left| \frac{3^{n+1}x^{2(n+1)}}{n+2} \frac{n+1}{3^n x^{2n}} \right| &= \lim_{n\to\infty} \frac{3(n+1)}{n+2} |x^2| \\ &= 3|x|^2 \end{aligned}$$

We know the ratio test yields convergence when the limit is less then 1 and divergence when the limit is greater than 1. So, we have convergence when $3|x|^2 < 1$ or $|x| < 1/\sqrt{3}$ and divergence when $3|x|^2 > 1$ or $|x| > 1/\sqrt{3}$. Therefore, the radius of convergence is $R = 1/\sqrt{3} = \sqrt{\frac{1}{3}}$.