The probability distribution function

MathsNET
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- Explain why $\lim_{x\to-\infty} F_X(x) = 0$ $F_X(x)$ is the probability distribution function for the random variable X

- Explain why $\lim_{x\to+\infty} F_X(x) = 1$. $F_X(x)$ is the probability distribution function for the random variable X

- Consider a die and explain what set of outcomes are in each of the following subsets $\{s : (s \in \Omega) \wedge (x(s) \leq 0\}$, $\{s : (s \in \Omega) \wedge (x(s) \leq 1\}$, $\{s : (s \in \Omega) \wedge (x(s) \leq 1.5\}$, $\{s : (s \in \Omega) \wedge (x(s) \leq 4.5\}$ and $\{s : (s \in \Omega) \wedge (x(s) \leq 6.25\}$. In these expressions Ω is used to represent the sample space for the experiment and $x(s)$ tells you the value that comes up when the dice is rolled.

- Sketch the probability distribution function for a random variable X tells you the outcome of a fair dice roll. Indicate all the points on this curve where the function is discontinuous.

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- Write a mathematical expression using limits which tells us that the function $f(x)$ has a discontinuity at a.