

# INTRODUCTION TO PROBABILITY MODELS

Lecture 26

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## EXAMPLE 1

Suppose that a continuous random variable,  $X$ , has the probability density function (PDF) given below:

$$f_X(x) = \begin{cases} \frac{3}{2}x, & 0 \leq x \leq 1 \\ \frac{1}{4}, & 5 \leq x \leq 6 \\ 0, & \text{otherwise} \end{cases}$$

1. What is the probability that  $X$  is equal to 4?
2. What is the probability that  $X$  is more than 4?
3. Find  $F_X(5.6)$
4. Knowing that  $X$  is more than 0.8, what is the probability that  $X$  is less than 5.6?
5. What is the 85<sup>th</sup> percentile of  $X$ ?

# **TIME FOR QUIZ**