

Week 4 Pre-Class Warm-up

w203 Instructional Team

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The ‘Pyramid’ Distribution

Suppose that X is a continuous random variable with the following PDF.

$$f_X(x) = \begin{cases} x, & 0 \leq x < 1 \\ 2 - x, & 1 \leq x < 2 \\ 0, & \text{otherwise} \end{cases}$$

- Find the cumulative density function of X , F_X , and plot it.
- Compute $E(X)$
- Compute $var(X)$
- Suppose $Y(X) = X^2$. Explain why Y is also a random variable.
- Compute $E(Y)$