EXAM P QUESTIONS OF THE WEEK

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Week of April 2/07

X is a continuous random variable with density function $f(x) = \begin{cases} |x| \text{ for } -1 \le x \le 1 \\ 0, \text{ otherwise} \end{cases}$.

Find $E[\,|X|\,]$.

A) 0 B) $\frac{1}{3}$ C) $\frac{2}{3}$ D) 1 E) $\frac{4}{3}$

The solution can be found below.

Week of April 2/07 - Solution

$E[\,|X|\,] = \int_{-1}^{1} |x|\, f(x)\, dx = \int_{-1}^{1} |x| \cdot |x|\, dx = \int_{-1}^{1} |x|^2\, dx = \int_{-1}^{1} x^2\, dx = \frac{2}{3}$.

Answer: C