

Question 4

Let X be a discrete random variable with the following probability distribution function (PDF):

$$p_X(k) = \begin{cases} \frac{1}{4}, & k = -2 \\ \frac{1}{8}, & k = -1 \\ \frac{1}{8}, & k = 0 \\ \frac{1}{4}, & k = 1 \\ \frac{1}{4}, & k = 2 \\ 0, & \text{otherwise} \end{cases}$$

We define a new random variable Y as $Y = (X + 1)^2$. Find the probability distribution function (PDF) of Y .

Solution

Answer

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