

Solution to 12.13.3.88

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Question: For the following probability distribution:

X	-4	-3	-2	-1	0
$P(X)$	0.1	0.2	0.3	0.2	0.2

$E(X)$ is equal to:

- 1) 0
- 2) -1
- 3) -2
- 4) -1.8

Solution: $E(X)$ is given by

$$E(X) = \sum_{k=-4}^0 k p_X(k) \quad (1)$$

$$= -4p_X(-4) - 3p_X(-3) - 2p_X(-2) - p_X(-1) \quad (2)$$

$$= -4(0.1) - 3(0.2) - 2(0.3) - 1(0.2) \quad (3)$$

$$= -1.8 \quad (4)$$