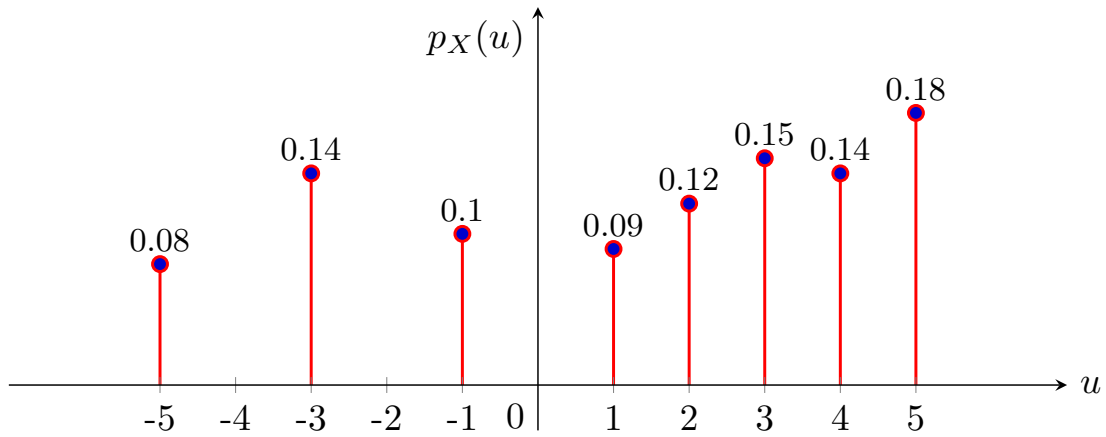
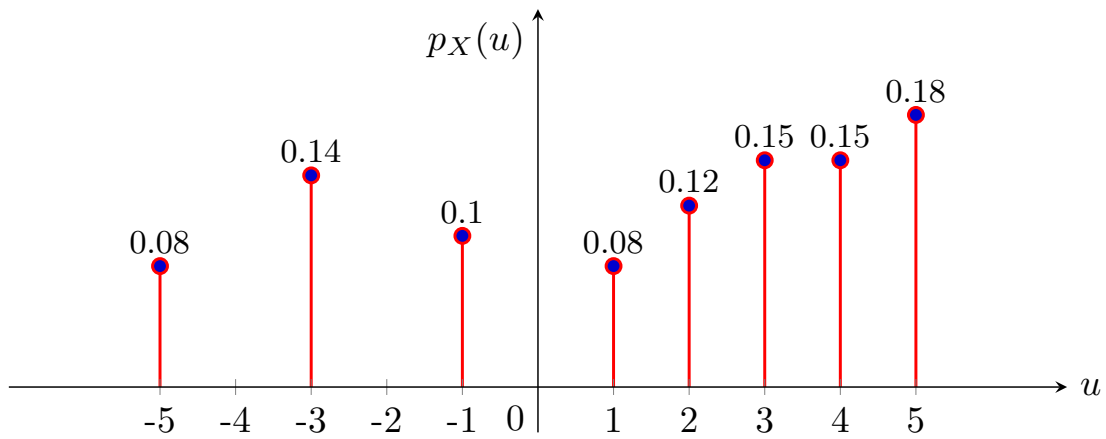


Let X be a discrete random variable, whose probability mass function is shown below. What is the probability that X is 2 or 3, given that $2|X - 1|$ is less than 3 ?



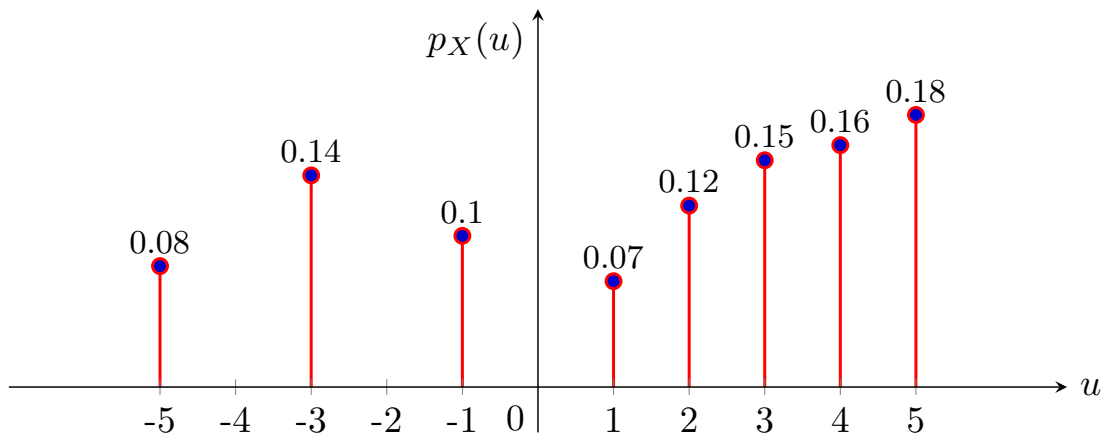
- (a) $4/7$
- (b) $3/7$
- (c) $1/4$
- (d) $9/46$
- (e) 0.21
- (f) 0.27
- (g) 0
- (h) 1
- (i) $1/2$
- (j) None of these

Let X be a discrete random variable, whose probability mass function is shown below. What is the probability that X is 2 or 3, given that $2|X - 1|$ is less than 3 ?



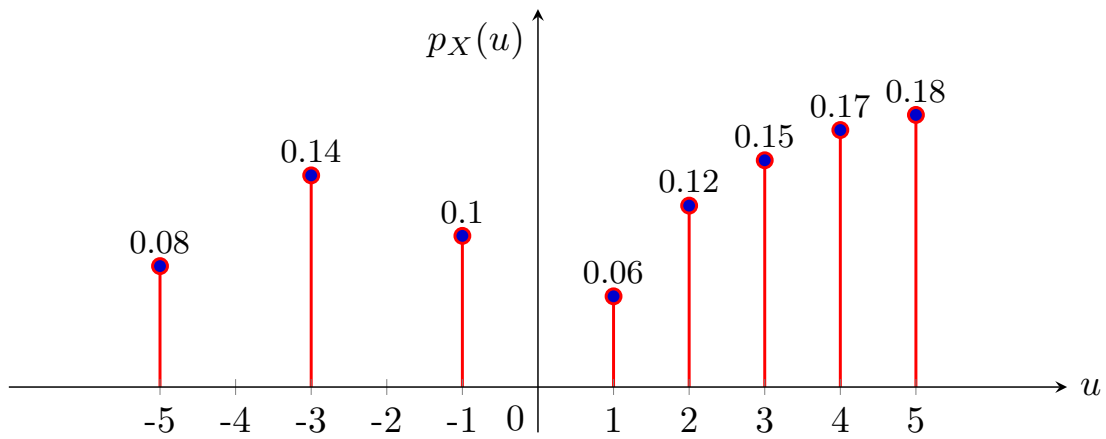
- (a) $3/5$
- (b) $2/5$
- (c) $8/35$
- (d) $8/45$
- (e) 0.2
- (f) 0.27
- (g) 0
- (h) 1
- (i) $1/2$
- (j) None of these

Let X be a discrete random variable, whose probability mass function is shown below. What is the probability that X is 2 or 3, given that $2|X - 1|$ is less than 3 ?



- (a) 12/19
- (b) 7/19
- (c) 7/34
- (d) 7/44
- (e) 0.19
- (f) 0.27
- (g) 0
- (h) 1
- (i) 1/2
- (j) None of these

Let X be a discrete random variable, whose probability mass function is shown below. What is the probability that X is 2 or 3, given that $2|X - 1|$ is less than 3 ?



- (a) $2/3$
- (b) $1/3$
- (c) $2/11$
- (d) $6/43$
- (e) 0.18
- (f) 0.27
- (g) 0
- (h) 1
- (i) $1/2$
- (j) None of these

Solution:

$$P(X \in \{2, 3\} \mid 2|X - 1| < 3) = P(X \in \{2, 3\} \mid P(|X - 1| < 3/2)) = P(X \in \{2, 3\} \mid X \in \{1, 2\}) = \frac{p_X(2)}{p_X(1) + p_X(2)}$$