Question

A spinner has the probability distribution shown below.

x	$\Pr(x)$
13	0.07
16	0.32
17	0.41
20	0.2

Answerlist

- What is the probability of spinning 13? In other words, what is $\Pr(X = 13)$?
- What is the probability of spinning 16 or 17? In other words, what is $\Pr(X = 16 \text{ or } X = 17)$?
- If spinning twice, what is the probability of first spinning 16 and then spinning 17? In other words, what is $\Pr(X_1 = 16 \text{ and } X_2 = 17)$?
- What is the probability of spinning at most 17? In other words, what is $\Pr(X \leq 17)$?
- Determine the mean of the probability distribution by using $\mu = \sum x \cdot \Pr(x)$.
- Determine the standard deviation of the probability distribution by using $\sigma = \sqrt{\sum (x - \mu)^2 \cdot \Pr(x)}$.

Solution

Make a table (for parts d and e).

x	$\Pr(x)$	$x \cdot \Pr(x)$	$x - \mu$	$(x - \mu)^2$	$(x - \mu)^2 \cdot \Pr(x)$
13	0.07	0.91	-4	16	1.12
16	0.32	5.12	-1	1	0.32
17	0.41	6.97	0	0	0
20	0.2	4	3	9	1.8
		$\sum x \cdot \Pr(x) = 17$			$\sigma^2 = 3.24$
		$\mu = 17$			$\sigma = 1.8$

Answerlist

- 0.07
- 0.73
- 0.1312
- 0.8
- $\mu = 17$
- $\sigma = 1.8$

Meta-information

extype: string exsolution: yo exname: marbles extol: 0.01