

Seatwork

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Exercises A

Determine whether the distribution represents a probability distribution. Explain your answer.

1)

X	1	5	8	7	9
P(X)	1/3	1/3	1/3	1/3	1/3

Not Discrete Probability Distribution. Because not all the properties of a discrete probability distribution are met.

2)

X	0	2	4	6	8
P(X)	1/6	1/6	1/3	1/6	1/6

Discrete Probability Distribution. Because all the properties of a discrete probability distribution are met.

3)

X	1	2	3	5
P(X)	1/4	1/8	1/4	1/8

Not Discrete Probability Distribution. Because only one of the properties of a discrete probability distribution is met.

4)

X	4	8	12	15	17
P(X)	1/5	1/8	1/8	1/5	1/8

Not Discrete Probability Distribution. Because just the first property of a discrete probability distribution is met.

5)

X	1	3	5	7
P(X)	0.35	0.25	0.22	0.12

Not Discrete Probability Distribution. Because the sum of all the probabilities is missing just 0.1 to meet the second property.

Exercises B

Construct the probability distribution for the random variables described in each of the following situations. Draw the corresponding histogram for each probability distribution.

1. Four coins are tossed. Let Z be the random variable representing the number of heads that turn up. Find the values of the random variable Z .

Value of the Random Variable Z	Probability $P(Z)$
0	$1/16$
1	$1/4$
2	$3/8$
3	$1/4$
4	$1/16$

2. A shipment of five computers contains two that are slightly defective. If a retailer receives three of these computers at random, list the elements of the sample space S using the letters D and N for defective and non-defective computer, respectively. To each sample point, assign a value x of the random variable X representing the number of computers purchased by the retailer which are slightly defective.

Value of the Random Variable X	Probability $P(X)$
0	$1/7$
1	$3/7$
2	$3/7$

3. Let T be a random variable giving the number of heads in the three tosses of a coin. List the elements of the sample space S for the three tosses of the coin and assign a value to each sample point.

Value of the Random Variable T	Probability $P(T)$
0	$1/8$
1	$3/8$
2	$3/8$
3	$1/8$