



# Probability Random Variables - Experiment, X Definition and X Value to Outcome List

**1** Which list shows every outcome for this value of X?

Experiment: roll two dice. Let X = the sum of the two dice. Which list shows every outcome that gives X = 10?

- |   |                                      |
|---|--------------------------------------|
| A | $\{(4, 6), (5, 5)\}$                 |
| B | $\{(5, 6), (6, 5)\}$                 |
| C | $\{(1, 1), (4, 6), (5, 5), (6, 4)\}$ |
| D | $\{(4, 6), (5, 5), (6, 4)\}$         |

**2** Which list shows every outcome for this value of X?

Experiment: roll two dice. Let X = the sum of the two dice. Which list shows every outcome that gives X = 5?

- |   |  |
|---|--|
| A | $\{(1, 4), (2, 3), (3, 2), (4, 1)\}$         |
| B | $\{(1, 1), (1, 4), (2, 3), (3, 2), (4, 1)\}$ |
| C | $\{(1, 4), (2, 3), (3, 2)\}$                 |
| D | $\{(1, 5), (2, 4), (3, 3), (4, 2), (5, 1)\}$ |

**3** Which list shows every outcome for this value of X?

Experiment: spin a spinner with equal red and blue sections 2 times. Let X = the number of reds. Which list shows every outcome that gives X = 1?

- |   |                  |   |              |
|---|------------------|---|--------------|
| A | $\{RR\}$         | B | $\{BR\}$     |
| C | $\{BR, RB, RR\}$ | D | $\{BR, RB\}$ |

**4** Which list shows every outcome for this value of X?

Experiment: roll two dice. Let X = the sum of the two dice. Which list shows every outcome that gives X = 7?

- |   |  |
|---|--|
| A | $\{(1, 6), (2, 5), (3, 4), (4, 3), (5, 2), (6, 1)\}$         |
| B | $\{(2, 6), (3, 5), (4, 4), (5, 3), (6, 2)\}$                 |
| C | $\{(1, 6), (2, 5), (3, 4), (4, 3), (5, 2)\}$                 |
| D | $\{(1, 1), (1, 6), (2, 5), (3, 4), (4, 3), (5, 2), (6, 1)\}$ |

**5** Which list shows every outcome for this value of X?

Experiment: flip 3 coins. Let X = the number of tails. Which list shows every outcome that gives X = 2?

- |   |                          |
|---|--------------------------|
| A | $\{TTT\}$                |
| B | $\{HTT, THT, TTH, TTT\}$ |
| C | $\{HTT, THT, TTH\}$      |
| D | $\{HTT, THT\}$           |

**6** Which list shows every outcome for this value of X?

Experiment: roll two dice. Let X = the sum of the two dice. Which list shows every outcome that gives X = 3?

- |   |                              |
|---|------------------------------|
| A | $\{(1, 3), (2, 2), (3, 1)\}$ |
| B | $\{(1, 2), (2, 1)\}$         |
| C | $\{(1, 1), (1, 2), (2, 1)\}$ |
| D | $\{(1, 2)\}$                 |

**7** Which list shows every outcome for this value of X?

Experiment: spin a spinner with equal red and blue sections 4 times. Let X = the number of reds. Which list shows every outcome that gives X = 2?

- |   |  |
|---|--|
| A | $\{BBRR, BRBR, BRRB, RBRR, RBRB, RRBB\}$       |
| B | $\{BRRR, RBRR, RRBR, RRRB\}$                   |
| C | $\{BBRR, BRBR, BRRB, RBRR, RBRB\}$             |
| D | $\{BBRR, BRBR, BRRB, RBRR, RBRB, RRBB, RRRR\}$ |

**8** Which list shows every outcome for this value of X?

Experiment: roll two dice. Let X = the sum of the two dice. Which list shows every outcome that gives X = 8?

- |   |  |
|---|--|
| A | $\{(3, 6), (4, 5), (5, 4), (6, 3)\}$                 |
| B | $\{(1, 1), (2, 6), (3, 5), (4, 4), (5, 3), (6, 2)\}$ |
| C | $\{(2, 6), (3, 5), (4, 4), (5, 3)\}$                 |
| D | $\{(2, 6), (3, 5), (4, 4), (5, 3), (6, 2)\}$         |