

Grade 7 · Probability and Probability Models · Test

Common Core 7.SP.C.5, 7.SP.C.6, 7.SP.C.7 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This 45-minute test covers probability and probability models: likelihood from 0 to 1, theoretical and experimental probability, uniform and non-uniform models, and comparing predicted counts with observed counts. There are 8 questions worth 20 points. Show your work and write fractions in lowest terms.

Test information

- **Grade:** Grade 7
- **Chapter:** Probability and Probability Models
- **Common Core:** 7.SP.C.5, 7.SP.C.6, 7.SP.C.7
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 3 pts; Question 3: 3 pts; Question 4: 2 pts; Question 5: 3 pts; Question 6: 3 pts; Question 7: 2 pts; Question 8: 2 pts)

Question 1: Likelihood (2 points)

A bag holds 10 marbles, and all of them are red. One marble is picked at random. **(a)** Find the probability that it is blue and describe the likelihood in words. (1 point) **(b)** Find the probability that it is red and describe the likelihood in words. (1 point)

Question 2: Spinner probabilities (3 points)

Jamal spins the spinner once. All 6 sectors are equal.

- Find the probability of green. (1 point)
- Find the probability of red. (1 point)
- Find the probability of not blue. (1 point)

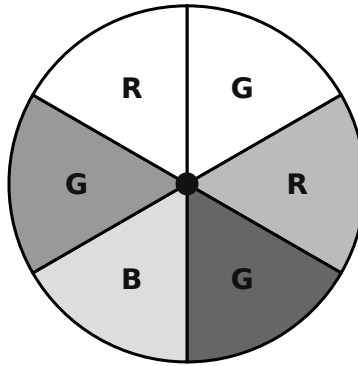


Figure. A spinner with 6 equal sectors: G is green, R is red, B is blue.

Question 3: Spinner experiment (3 points)

Sofia spun a different color spinner 40 times.

- Find the experimental probability of green. (1 point)
- Find the experimental probability of red. (1 point)
- Predict how many times blue will come up in 200 spins. (1 point)

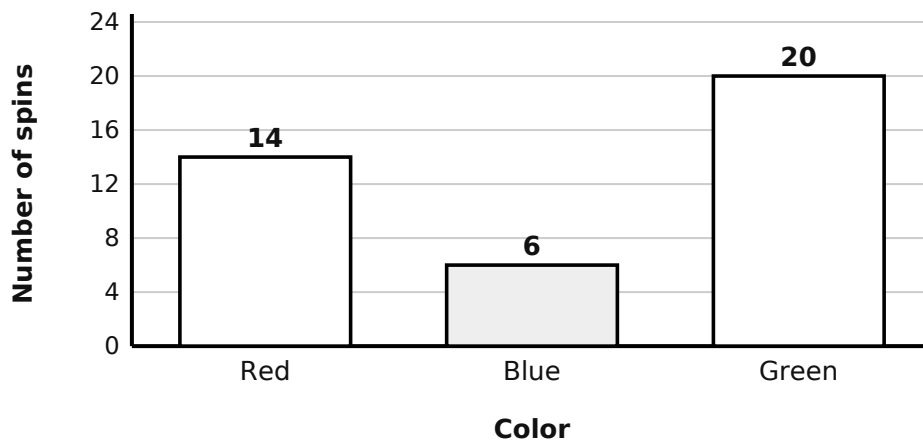


Figure. Results of 40 spins of a color spinner.

Question 4: Fair cube (2 points)

A fair number cube has faces 1 to 6. **(a)** Find the probability of rolling a number greater than 4. (1 point) **(b)** Find the probability of rolling an odd number. (1 point)

Question 5: Missing probability (3 points)

A game spinner has four outcomes with this probability model.

Outcome	A	B	C	D
Probability	0.5	0.25	0.15	?

Figure. A probability model with one missing value.

- Find the missing probability for D. (1 point)
- Find the probability of C or D. (1 point)
- Predict how many times B will occur in 200 spins. (1 point)

Question 6: Fair or not (3 points)

Priya rolled a number cube 30 times.

- How many times should each face appear if the cube is fair? (1 point)
- Which faces differ the most from that number, and by how much? (1 point)
- Is it reasonable to think the cube is fair? Explain. (1 point)

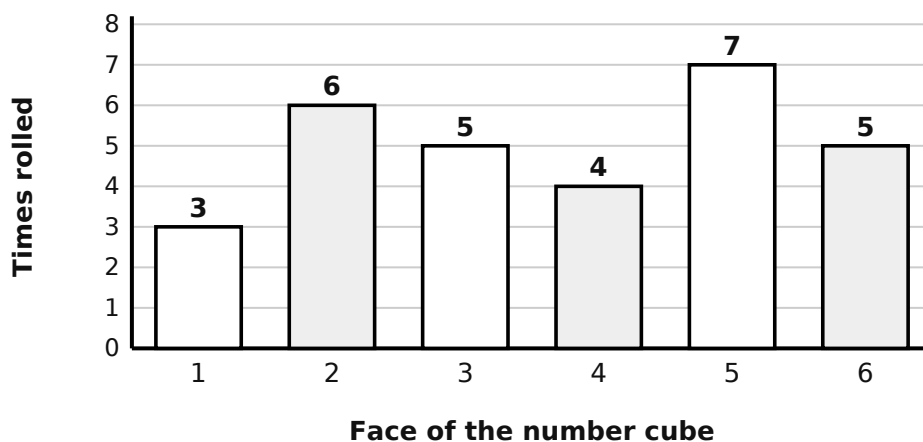


Figure. Results of 30 rolls of a number cube.

Question 7: Tossing a cup (2 points)

Noah tossed a paper cup 80 times. It landed open end up 12 times, open end down 36 times, and on its side 32 times. **(a)** Write a probability model as decimals. (1 point) **(b)** Predict how many times the cup lands on its side in 300 tosses. (1 point)

Question 8: Bus schedule (2 points)

The probability that Mei's school bus is late on a given day is $\frac{3}{20}$. **(a)** Find the probability that the bus is on time. (1 point) **(b)** About how many late days should she expect in 40 school days? (1 point)