

Grade 7 - Probability and Probability Models - Test Answer Key

Common Core 7.SP.C.5, 7.SP.C.6, 7.SP.C.7 · maths-pdf.fr/en/

Use this answer key and scoring guide to grade the probability models test. Each solution shows the full work, and the scoring note explains how the points are awarded. Give partial credit for correct steps even when the final answer is wrong.

Grade 7 · Common Core State Standards: **7.SP.C.5, 7.SP.C.6, 7.SP.C.7**

Question 1 - Likelihood [2 pts]

- a. Certain; 1.
- b. Equally likely; $\frac{1}{2}$.
- c. Impossible; 0.
- d. Likely; $\frac{5}{6}$.

certain, equally likely, impossible, likely

Scoring: Half a point per correct answer.

Question 2 - Spinner [2 pts]

$$\frac{5}{10} = \frac{1}{2}.$$

$$1 - \frac{1}{2} = \frac{1}{2}$$

$$\frac{1}{2}; \frac{1}{2}$$

Scoring: 1 point for each.

Question 3 - Relative frequency [2 pts]

$$\frac{4}{30} = \frac{2}{15} \approx 0.13.$$

$$\frac{1}{6} \approx 0.17, \text{ close but not equal.}$$

$$\frac{2}{15} \text{ versus } \frac{1}{6}$$

Scoring: 1 point for the relative frequency; 1 point for the comparison.

Question 4 - Missing probability [2 pts]

$$x = 1 - 0.1 - 0.35 - 0.25 = 0.3.$$

B has the greatest probability, 0.35.

x = 0.3; B

Scoring: 1 point for x; 1 point for the most likely outcome.

Question 5 - Predict [2 pts]

About 75

Students	Fraction buying	Buyers
250	0.3	75

Prediction.

Scoring: 1 point for the setup; 1 point for the answer.

Question 6 - Experiment vs theory [2 pts]

$$\frac{27}{50} = 0.54 \text{ versus } 0.5.$$

The difference is small, which is expected with only 50 tosses.

0.54 versus 0.5

Scoring: 1 point for the relative frequency; 1 point for the comparison.

Question 7 - Complement [2 pts]

$$1 - 0.82 = 0.18.$$

$$0.18 \times 500 = 90$$

0.18; about 90 flights

Scoring: 1 point for the probability; 1 point for the prediction.

Question 8 - Non-uniform model [3 pts]

- a. $1 - 0.4 - 0.25 - 0.2 = 0.15$.
- b. $0.4 + 0.25 = 0.65$.
- c. $0.2 \times 200 = 40$.

Color	Red	Blue	Green	Yellow
Probability	0.4	0.25	0.2	0.15

Completed model.

Scoring: 1 point for each part.

Question 9 - Team games [3 pts]

- a. $\frac{14}{20} = 0.7$.
- b. $0.7 \times 30 = 21$ wins.
- c. Each game depends on chance, so results of a few games can differ from the relative frequency.

Scoring: 1 point for each part.

Total

20 points