

Grade 7 - Probability and Probability Models - Test

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

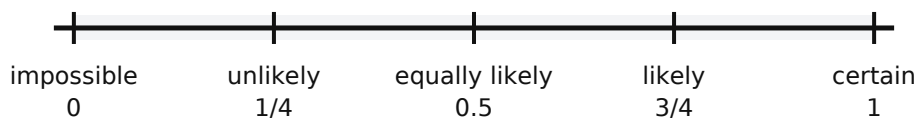
Name: _____ Class: _____ Date: ____/____/____

This 45-minute test checks the likelihood scale from 0 to 1, relative frequency, theoretical probability, and uniform and non-uniform probability models (Common Core 7.SP.C.5-7). It has 9 questions worth 20 points in all. Show your work, because most questions give partial credit for correct steps.

About this test

- Grade: Grade 7
- Chapter: Probability and Probability Models
- Standards: 7.SP.C.5, 7.SP.C.6, 7.SP.C.7
- Time: 45 minutes
- Total: 20 points

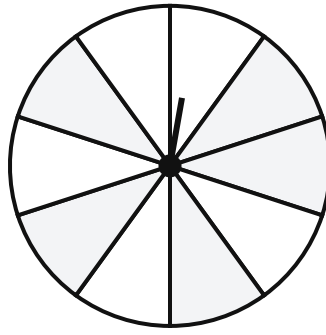
Question 1 - Likelihood [2 pts]



A likelihood scale.

Describe the likelihood of each event as impossible, unlikely, equally likely, likely, or certain, and give a probability: (a) the sun rises tomorrow, (b) a fair coin lands tails, (c) rolling 8 on a standard die, (d) rolling a number less than 6 on a standard die.

Question 2 - Spinner [2 pts]



A spinner with 10 equal sections: 5 white, 3 light gray, 2 dark gray.

Find the probability of landing on (a) white and (b) not white.

Question 3 - Relative frequency [2 pts]

Mei rolled a die 30 times and got 4 sixes. Find the relative frequency of a six, and compare it with the theoretical probability.

Question 4 - Missing probability [2 pts]

A model for a spinner has outcomes A, B, C, and D with probabilities 0.1, 0.35, 0.25, and x . Find x and tell which outcome is most likely.

Question 5 - Predict [2 pts]

The probability that a student buys lunch is 0.3. About how many of 250 students buy lunch?

Question 6 - Experiment vs theory [2 pts]

Outcome	Heads	Tails
Count in 50 tosses	27	23
Theory (50 tosses)	25	25

A coin experiment.

Find the relative frequency of heads and compare it with the theoretical probability. Is the difference surprising?

Question 7 - Complement [2 pts]

The probability that a flight is on time is 0.82. Find the probability that it is not on time, and the number of delayed flights expected out of 500.

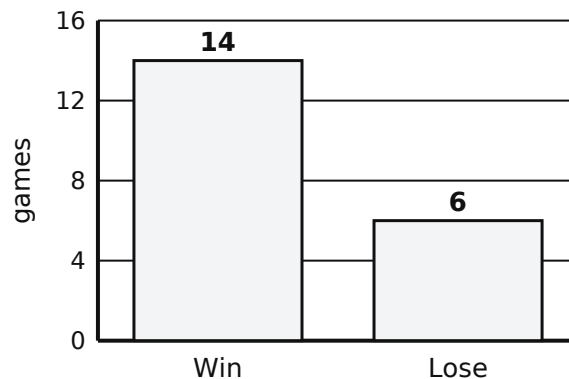
Question 8 - Non-uniform model [3 pts]

Color	Red	Blue	Green	Yellow
Probability	0.4	0.25	0.2	?

A non-uniform model for a spinner.

- Find $P(\text{yellow})$. (1 point)
- Find $P(\text{red or blue})$. (1 point)
- The spinner is spun 200 times. Predict the number of green. (1 point)

Question 9 - Team games [3 pts]



A team's first 20 games.

- Find the relative frequency of a win. (1 point)
- Predict the number of wins in the next 30 games. (1 point)
- Explain why the prediction is only an estimate. (1 point)