



# Math Worksheet for 7th Grade

## Probability models

Name: \_\_\_\_\_

Due Date: \_\_\_\_\_

Teacher: \_\_\_\_\_

Parent Sign: \_\_\_\_\_

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Questions:

1. What is the probability of getting heads when you flip a fair coin once?
2. What is the probability of getting tails when you flip a fair coin once?
3. What is the probability of rolling a 4 on a fair six-sided die?
4. What is the probability of rolling an even number on a fair six-sided die?
5. What is the probability of rolling a number greater than 4 on a fair six-sided die?
6. If you flip two fair coins, what is the probability both are heads?
7. If you flip two fair coins, what is the probability of getting at least one head?
8. What is the probability of drawing a heart from a standard 52-card deck?
9. What is the probability of drawing an ace from a standard 52-card deck?
10. A spinner has 5 equal sections and 2 of them are blue. What is the probability the spinner lands on blue?
11. A bag contains 3 red, 2 blue, and 5 green marbles (10 marbles total). What is the probability of picking a green marble?
12. What is the probability of not rolling a 2 on a fair six-sided die?
13. If you roll two fair six-sided dice, what is the probability the sum is 7?
14. If a digit is chosen uniformly at random from 0–9, what is the probability it is a prime number (2, 3, 5, 7)?
15. A bag has 4 red and 6 blue marbles. What is the probability of drawing a red marble?
16. What is the probability of not drawing a heart from a standard 52-card deck?
17. A spinner has 12 equal sections. What is the probability the spinner lands in the first quarter of sections?
18. If you roll two fair six-sided dice, what is the probability both show even numbers?
19. If you choose a random letter from the word "MATH" (4 letters), what is the probability you choose a vowel?
20. What is the probability of rolling a 5 or a 6 on a fair six-sided die?
21. A fair coin is tossed 50 times and lands heads 28 times. What is the experimental probability of heads?
22. A fair six-sided die is rolled 60 times and the face 3 appears 8 times. What is the experimental probability of rolling a 3?
23. A spinner was spun 50 times: red 15 times, blue 20 times, green 15 times. What is the experimental probability of blue?
24. A marble is drawn from a bag 30 times (with replacement) and green was drawn 12 times. What is the experimental probability of green?
25. A survey of 40 students: 18 chose chocolate, 12 vanilla, 10 strawberry. What is the experimental probability a randomly chosen student picked chocolate?
26. A coin is flipped 100 times and lands heads 47 times. What is the experimental probability of heads?
27. A die is rolled 30 times and an even number appears 17 times. What is the experimental probability of rolling even?

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28. A spinner was spun 25 times and landed on the star 5 times. What is the experimental probability of landing on the star?
29. Two coins were flipped 40 times and both were heads 8 times. What is the experimental probability of getting both heads?
30. Two dice were rolled 200 times and the sum was 7 on 37 trials. What is the experimental probability of sum 7?
31. If a fair coin is flipped 120 times, how many heads would you expect? (prediction)
32. If a fair six-sided die is rolled 90 times, how many sixes would you expect? (prediction)
33. A spinner has 8 equal sections and 1 is labeled "win." If spun 80 times, how many wins would you expect?
34. A bag contains 3 red and 7 blue marbles. If one marble is drawn 50 times (with replacement), how many reds would you expect?
35. If you draw a card from a full deck 200 times with replacement, how many hearts would you expect?
36. If a pair of fair dice are rolled 60 times, how many times would you expect the sum to be 7?
37. If you flip two fair coins 100 times, how many times would you expect both to be heads?
38. If digits 0–9 are chosen uniformly 500 times, how many primes (2,3,5,7) would you expect?
39. A spinner has 5 equal sections with 2 blue. If spun 75 times, how many times would you expect blue?
40. If a fair die is rolled 30 times, how many even numbers would you expect?
41. At a frozen yogurt shop the flavor probabilities are: vanilla  $\frac{1}{2}$ , chocolate  $\frac{1}{3}$ , strawberry  $\frac{1}{6}$ . What is the probability a customer chooses vanilla?
42. Using the same shop model (vanilla  $\frac{1}{2}$ , chocolate  $\frac{1}{3}$ , strawberry  $\frac{1}{6}$ ), what is the probability a customer chooses chocolate?
43. Using the same shop model, what is the probability a customer chooses strawberry?
44. The shop's topping probabilities are: sprinkles 40%, fruit 35%, nuts 25%. What is the probability a customer chooses sprinkles?
45. Using the topping model, what is the probability a customer chooses fruit?
46. Using the topping model, what is the probability a customer chooses nuts?
47. Assuming flavor and topping choices are independent, what is the probability a customer chooses vanilla and sprinkles?
48. Assuming independence, what is the probability a customer chooses chocolate and nuts?
49. Assuming independence, what is the probability a customer chooses strawberry or sprinkles (or both)?
50. If 120 customers come to the shop, how many would you expect to order chocolate with fruit topping? (use the given flavor and topping probabilities)