Year 9 Probability – Mixed Practice

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Year 9 · Maths · Probability · Mixed practice · 30 questions

Name _____ **Date** _____

A. Mixed practice (mixed order)

1. A card is taken at random from cards numbered 1 to 30. Find the probability that the number is a prime number.

Answer _____

2. The probability that Sam's bus is late is 0.2. The probability that it rains in the morning is 0.65. The two events are independent. Find the probability that both events happen.

Answer _____

3. A card is taken at random from cards numbered 1 to 30. Find the probability that the number is a multiple of 3 and a multiple of 5.

Answer _____

4. A student joins exactly one club: art, chess, drama or music. P(art) = 0.2, P(chess) = 0.35, P(drama) = 0.3. Find P(music) and P(chess or music).

Answer _____

5. A card is taken at random from cards numbered 1 to 40. Find the probability that the number is a multiple of 4 or a multiple of 5.

Answer _____

6. A student joins exactly one club: art, chess, drama or music. P(art) = 0.15, P(chess) = 0.25, P(drama) = 0.55. Find P(music) and P(art or music).

Answer _____

7. A card is taken at random from cards numbered 1 to 20. Find the probability that the number is a multiple of 4 and a multiple of 6.

Answer _____

8. The probability that Sam's bus is late is 0.9. The probability that it rains in the morning is 0.15. The two events are independent. Find the probability that neither event happens.

Answer _____

9. Tomorrow's weather will be sunny, cloudy, rainy or snowy. P(sunny) = 0.25, P(cloudy) = 0.2, P(rainy) = 0.1. Find P(snowy) and P(sunny or snowy).

Answer _____

10. The probability that the school team wins its match is 0.2. The probability that the town team wins its match is 0.2. The two events are independent. Find the probability that neither event happens.

Answer _____

11. A card is taken at random from cards numbered 1 to 36. Find the probability that the number is a multiple of 2 or a multiple of 7.

Answer _____

12. Spinner A is numbered 1 to 5 and spinner B is numbered 1 to 4. Both are fair and are spun once. Use a sample space diagram to find the probability that the difference between the two numbers is 1.

Answer _____

13. Tomorrow's weather will be sunny, cloudy, rainy or snowy. P(sunny) = 0.15, P(cloudy) = 0.6, P(rainy) = 0.05. Find P(snowy) and P(rainy or snowy).

Answer _____

14. The table shows the probabilities of the scores on a biased four-sided spinner. Find the value of x and the probability of scoring 4.

Score	1	2	3	4
Probability	0.25	2x	0.35	2x

Answer _____

15. The two-way table shows what 76 visitors bought to drink at a café. One of them is chosen at random. Find the probability that the visitor is an adult who bought tea.

	Tea	Coffee	Juice	Total
Adults	5	20	6	31
Children	9	24	12	45
Total	14	44	18	76

Answer _____

16. A card is taken at random from cards numbered 1 to 40. Find the probability that the number is a square number.

Answer _____

17. Spinner A is numbered 1 to 6 and spinner B is numbered 1 to 3. Both are fair and are spun once. Use a sample space diagram to find the probability that the product is even.

Answer _____

18. The probability that a traffic light is red when Lina reaches it is 0.8. The probability that the lift is working when she gets to the office is 0.65. The two events are independent. Find the probability that both events happen.

Answer _____

19. Are these two events independent: choosing a captain from a class, then choosing a vice-captain from the rest of the class? Explain.

Answer _____

20. A spinner has five equal sections and one of them is blue. It is spun 125 times and lands on blue 14 times. How many blues would you expect if the spinner is fair? What do the results suggest?

Answer _____

21. A pot holds 4 blue and 4 green pens. Two pens are taken at random, one after the other, with replacement (the first is put back). Find the probability that both are blue. Are the two choices independent?

Answer _____

22. A fair coin is flipped and a fair spinner numbered 1 to 8 is spun. The results are independent. Find the probability of heads and a number greater than 2.

Answer _____

23. Spinner A is numbered 1 to 3 and spinner B is numbered 1 to 8. Both are fair and are spun once. Use a sample space diagram to find the probability that the difference between the two numbers is 3.

Answer _____

24. For a bus that is always early, on time or late, Chen says P(early) = 0.35, P(on time) = 0.15, P(late) = 0.6. Explain why this cannot be right, and find the correct third probability if the first two are correct.

Answer _____

25. The two-way table shows how 89 students travel to school. One of them is chosen at random. Find the probability that the student walks.

	Walk	Bus	Car	Total
Boys	19	20	13	52
Girls	24	7	6	37
Total	43	27	19	89

Answer _____

26. Tomorrow's weather will be sunny, cloudy, rainy or snowy. P(sunny) = 0.1, P(cloudy) = 0.05, P(rainy) = 0.5. Find P(snowy) and P(cloudy or snowy).

Answer _____

27. A card is taken at random from cards numbered 1 to 20. Find the probability that the number is a square number.

Answer _____

28. The table shows the probabilities of the scores on a biased four-sided spinner. Find the value of x and the probability of scoring 2.

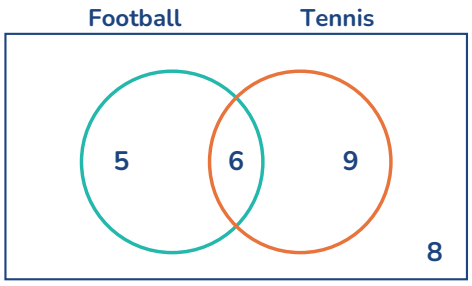
Score	1	2	3	4
Probability	0.35	2x	0.5	x

Answer _____

29. Kofi drops a piece of toast 10 times and it lands butter side down 2 times. Farah drops the same piece of toast 500 times and it lands butter side down 247 times. Whose results give the better estimate of the probability of landing butter side down? Give that estimate.

Answer _____

30. The Venn diagram shows the students in a group who play football or tennis. A student is chosen at random. Find the probability that the student plays football or tennis (or both), and the probability that the student plays neither.



Answer _____