

# Compound Probability - Exam Review #9

Match each type of event to its correct formula. Then, match it to a corresponding example of that kind of event.

C, Y 1. Independent

A.  $P(A \text{ or } B) = P(A) + P(B)$

W. drawing a spade or an 8

B, X 2. Dependent

B.  $P(A \text{ and } B) = P(A) \cdot P(B \text{ following } A)$

X. drawing a spade then an 8 without replacement

A, Z 3. Mutually exclusive

C.  $P(A \text{ and } B) = P(A) \cdot P(B)$

Y. drawing a spade then an 8 with replacement

D, W 4. Not mutually exclusive

D.  $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

Z. drawing a spade or a heart

After a doctor's appointment, the doctor offers you and your sibling a lollipop from a jar. There are 3 pink lollipops, 6 red lollipops, 9 green lollipops, and 12 yellow lollipops. What is the probability of you and your sibling choosing lollipops in the given order? (First, decide: do you put the lollipop back after you choose it?)

5. P(green, pink)

$$\frac{9}{30} \cdot \frac{3}{29} = \frac{9}{290}$$

6. P(red, red)

$$\frac{6}{30} \cdot \frac{5}{29} = \frac{1}{29}$$

7. P(pink, yellow)

$$\frac{3}{30} \cdot \frac{12}{29} = \frac{4}{145}$$

For a magic trick, you are asked to draw one playing card, replace it, and then draw a second card. What is the probability of you drawing cards in the given order?

8. P(club, red)

$$\frac{13}{52} \cdot \frac{26}{52} = \frac{1}{8}$$

9. P(3, face card)

$$\frac{4}{52} \cdot \frac{12}{52} = \frac{3}{169}$$

10. P(ace, black)

$$\frac{4}{52} \cdot \frac{26}{52} = \frac{1}{26}$$

11. P(not diamond, even #)

$$\frac{39}{52} \cdot \frac{20}{52} = \frac{15}{52}$$

You are rolling two six-sided dice. Calculate the probability of rolling both dice and getting the given sums.

Sum	Combinations	# of Combos
4	2+2	1
5	2+3, 3+2	2
6	2+4, 3+3, 4+2	3
7	2+5, 3+4, 4+3, 5+2	4
8	2+6, 3+5, 4+4, 5+3, 6+2	5
9	3+6, 4+5, 5+4, 6+3	4
10	4+6, 5+5, 6+4	3
11	5+6, 6+5	2
12	6+6	1

12. P(4 or 7)

$$\frac{1}{25} + \frac{4}{25} = \frac{5}{25}$$

13. P(5 or 11)

$$\frac{2}{25} + \frac{2}{25} = \frac{4}{25}$$

14. P(8 or 9)

$$\frac{5}{25} + \frac{4}{25} = \frac{9}{25}$$