

Probability of Compound Events Worksheet

USE THE MULTIPLICATION RULE, ADDITION RULE, AND/OR THE EQUATION FOR THE PROBABILITY OF COMPLEMENTARY EVENTS TO SOLVE THE PROBLEMS BELOW. USE THE QR CODE ON THE BACK TO CHECK YOUR ANSWERS.

- 1) An experiment consists of rolling two fair dice and adding the dots on the two sides facing up. What is the probability that the sum of the dots is 7 or 11?

- 2) An experiment consists of rolling two fair dice and adding the dots on the two sides facing up. What is the probability that the sum of the dots is even or a perfect square?

- 3) An experiment consists of randomly drawing a card from a standard deck. What is the probability that the card drawn is red or an ace?

- 4) An experiment consists of randomly drawing a card from a standard deck. What is the probability that the card drawn is black or even?

- 5) Johnny draws 2 cards without replacement from a standard deck of 52 cards. What is the probability of Johnny drawing a face card and then a 10?

- 6) Johnny draws 2 cards without replacement from a standard deck of 52 cards. What is the probability of Johnny drawing a queen and then another queen?

- 7) A box contains 6 red pens, 7 blue pens, and 2 green pens. Two pens are drawn out of the box with replacement. What is the probability of drawing a blue pen on the first draw and a green pen on the second draw?

- 8) A box contains 6 red pens, 4 blue pens, and 4 green pens. Two pens are drawn out of the box with replacement. What is the probability of drawing a red or blue pen on the first draw and a green pen on the second draw?

- 9) Bobby is taking a multiple-choice history test. He has decided to randomly guess on the first two questions. On each question there are 4 answer choices. What is the probability that he answers the first question incorrectly and the second question correctly?

- 10) Justin is taking a history exam. One of the questions gives 9 historical events that must be put into the correct chronological order. Assuming that Justin did not study for his exam, what is the probability that he will guess the correct order?

- 11) Jack has a pin number that he uses to access his bank account. His code consists of 5 different numbers from 0 to 9. What is the probability that someone could guess his code?
- 12) A basketball player has a $\frac{7}{10}$ probability of making a 2 – point shot and a $\frac{1}{10}$ probability of making a 3 – point shot. If he shoots a 2 – pointer and then a 3 – pointer, what is his probability of making both shots?
- 13) What is the aforementioned basketball player’s probability of making neither shot?
- 14) What is the aforementioned basketball player’s probability of making at least one of the shots?
- 15) A space vehicle has an independent backup system for one of its communication networks. The probability that the main system will function satisfactorily is 0.985, and the probability that the backup system will function satisfactorily is 0.985. What is the probability that during a given flight
- a) both systems function satisfactorily?
 - b) at least one system functions satisfactorily?
 - c) both systems fail?
- 16) Assume that the probability of the birth of a child of a particular gender is 50%. In a family with four children, what is the probability that
- a) all the children are boys?
 - b) all the children are the same gender?
 - c) there is at least one boy?

