

1. If the probability of success on any trial of a given binomial experiment is 0.46, what is the probability of failure?
2. If the probability of success on any one trial of a binomial experiment is 0.5, what is the probability of exactly two successes in three trials? (Round your answer to three decimal places.)
3. Jessica is conducting a binomial experiment in which the probability of success on the first trial is 0.3. What is the probability of success on the second trial?
 - ☐ A. 0.7
 - ☐ B. cannot be determined from the information given
 - ☐ C. 0.3
 - ☐ D. 0.09
4. A nickel and a dime are flipped at the same time. How many different outcomes are possible?
5. For a binomial experiment, $P(x=2) =$
 - ☐ A. q
 - ☐ B. the probability of 2
 - ☐ C. the probability that $x=2$ on any one trial
 - ☐ D. the probability of exactly two successes
6. Consider a binomial experiment with sixteen trials in which the probability of success on any one trial is 0.2. To five decimal places, what is the probability of at least three successes?
7. After blowing off class for a week, Jack finds himself faced with a eleven-question, multiple-choice quiz. Each question has four answers (of which exactly one is correct). If he simply guesses on all eleven questions, what is the probability that he gets at least six right? (Give your answer to five decimal places.)
8. Is the following a binomial scenario?

A fair coin is tossed until 15 heads are obtained. The variable x counts the number of tosses.

- ☐ A. No, because the number of trials is not fixed
- ☐ B. No, because the probability of success is not the same for all trials
- ☐ C. Yes, all the conditions for a binomial experiment are met

9. Is the following a binomial scenario?

A sample of 36 newborn infants is taken, and each child is identified as either a girl or a boy. The variable x represents the number of male babies.

- ☐ A. No, because the probability of success is not the same for all trials
- ☐ B. No, because the number of trials is not fixed
- ☐ C. Yes, all the conditions for a binomial experiment are met

10. The following scenario satisfies the conditions for a binomial experiment: We know that at any time a quarter of adults are on a diet. A random sample of six adults is taken.

What is the probability that exactly three people from our sample are on a diet?

(Round your answer to four decimal places.)

11. The following scenario satisfies the conditions for a binomial experiment: We know that at any time a quarter of adults are on a diet. A random sample of eight adults is taken.

What is the probability that fewer than three people from our sample are on a diet? (Round your answer to four decimal places.)

12. The following scenario satisfies the conditions for a binomial experiment: We know that at any time a quarter of adults are on a diet. A random sample of eight adults is taken.

What is the probability that more than three people from our sample are on a diet? (Round your answer to four decimal places.)

13. Is the following a binomial scenario?

Fifty traffic lights, one in each of fifty different cities, are observed at the same time to determine if they are red, yellow, or green.

- ☐ A. No, because the trials are not independent
- ☐ B. No, because each trial does not have only two outcomes
- ☐ C. No, because the number of trials is not fixed
- ☐ D. Yes, this meets all requirements for a binomial experiment

14. Offered a choice between beef hot dogs and chicken hot dogs, 64% of Americans choose beef. If 4 new people are given this choice, what is the probability that all of them will choose beef? (Round your answer to the nearest thousandth.)

15. Coke is the favorite soft drink of 16% of Americans. If you ask 19 people what their favorite soft drink is, what is the probability that at least 4 of them say Coke? (Round your answer to the nearest thousandth.)

16. The following data are based on a survey taken by a consumer research firm. In the table, x = the number of televisions per household and $P(x)$ = the probability that a household surveyed had x televisions.

x	0	1	2	3	4	5
$P(x)$	0.17	0.15	0.20	0.18	0.14	0.16

To the nearest hundredth, what is the probability that a household did *not* have exactly two televisions?

17. The following data are based on a survey taken by a consumer research firm. In the table, x = the number of televisions per household and $P(x)$ = the probability that a household surveyed had x televisions.

x	0	1	2	3	4	5
$P(x)$	0.06	0.16	0.15	0.25	0.20	0.18

To the nearest hundredth, what is the mean of this distribution?

18. A company operates seven factories in seven different third-world countries. At any one of the factories, there is a 10% chance of a strike at any time. None of the laborers at any of the factories knows what is happening at any of the others, so the probability of a strike at any one plant is not related to the probability of a strike at any other.

To four decimal places, what is the probability that at exactly 4 plants are on strike right now?

To four decimal places, what is the probability that at least 3 plants are on strike right now?

19. For a particular binomial experiment, $n=9$ and $p=0.27$. What is

$P(x=8)$? (Round your answer to three decimal places.)