

1. Suppose we roll a die and let A be the event that the number of spots showing on the die is 6. We then toss a coin and let B be the event that the coin comes up heads. Then, $P(A \text{ and } B)$ is

- A. $1/12$.
 - B. $4/6$.
 - C. $7/12$.
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2. In a town, 30% of the households own a dog, 20% own a cat, and 60% own neither a dog nor a cat. If we select a household at random, the chance that they own both a dog and a cat is

- A. 0.06.
 - B. 0.10.
 - C. 0.40.
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3. At a certain university, 42% of the students are women, and 18% are engineering majors. Of the engineers, 22% are women. If a student at this university is selected at random, what is the probability that the selected person is a woman engineering major?

- A. 0.0396
 - B. 0.0924
 - C. 0.6400
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4. At a certain university, 42% of the students are women, and 18% are engineering majors. Of the engineers, 22% are women. If a student at this university is selected at random, what is the probability that the selected person is either a woman or engineering major?

- A. 0.0396
 - B. 0.5604
 - C. 0.6000
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5. On a certain airline, the chance the early flight from Atlanta to Chicago is full is 0.80. The chance the late flight is full is 0.70. The chance both flights are full is 0.60. Can we believe the two flights being full are independent events?

- A. Yes.
 - B. No.
 - C. We do not have enough information.
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6. Most people think babies are equally likely to come as either a boy or a girl. This is not true. Actually, about 51.3% of all babies are boys. If a family has two children (not twins), what is the chance both children are boys?

- A. 25%
- B. 102.6%
- C. 26.3%

7. Most people think babies are equally likely to come as either a boy or a girl. This is not true. Actually, about 51.3% of all babies are boys. If a family has two children (not twins), what is the chance they have one boy and one girl?

- A. 0.25
 - B. 0.50
 - C. 0.24
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8. A card is drawn from a standard deck of 52 cards (4 suits: clubs, hearts, diamonds, and spades with values Ace, 2-10, Jack, Queen, and King in each suit). Let event A be that the card is a heart. Let event B be the event it is a face card. What is $P(A \text{ or } B)$?

- A. $25/52$
 - B. $22/52$
 - C. $16/52$
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9. A card is drawn from a standard deck of 52 cards (4 suits: clubs, hearts, diamonds, and spades with values Ace, 2-10, Jack, Queen, and King in each suit). Let event A be the event it is a face card. Let event B be that the card is a heart. Are events A and B independent?

- A. Yes
 - B. No
 - C. There is not enough information to tell.
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10. A psychology instructor asked the 100 females in her class to rate their intelligence on a scale of 1 to 10. The ratings were

Rating	5	6	7	8	9	10
Number	24	18	38	12	4	4

What is the probability a student rated herself an 8, if she rated herself at least an 8?

- A. 0.12
- B. 0.60
- C. 0.33