

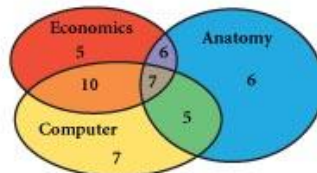
Guided Skills Practice

For Exercises 4 and 5, refer to the results of the survey about a change in public policy given on page 654.

- Find the probability that a randomly selected respondent to the survey favors or opposes the change in policy. (EXAMPLE 1)
- Find the probability that a randomly selected respondent to the survey is a man or favors the change in policy. (EXAMPLE 2)

APPLICATION

- EDUCATION** The economics, computer, and anatomy classes have 28 students, 29 students, and 24 students, respectively. Some students are taking more than one of these classes, as indicated in the diagram at right. Find the probability that a randomly selected student from these classes is taking at least two of the classes. (EXAMPLE 3)



Practice and Apply

A number cube is rolled once, and the number on the top face is recorded. Find the probability of each event.

- 5 or 6
- 1 or 4
- even or 3
- odd or 2
- less than 4 or 1
- greater than 2 or 6
- not 1
- not even
- even or odd

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 for Exercises 16–27

The table at right shows all of the possible outcomes of rolling two number cubes. Using the table, state whether the events in each pair below are inclusive or mutually exclusive. Then find the probability of each pair of events.

(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
(4, 1)	(4, 2)	(4, 3)	(4, 4)	(4, 5)	(4, 6)
(5, 1)	(5, 2)	(5, 3)	(5, 4)	(5, 5)	(5, 6)
(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)

- a sum of 2 or a sum of 4
- a sum of 8 or a sum of 12
- a sum of less than 3 or a sum of greater than 5
- a sum of less than 7 or a sum of greater than 8
- a sum of greater than 2 or a sum of greater than 6
- a sum of less than 3 or a sum of less than 10
- a sum of greater than 4 or a sum of less than 7
- a sum of greater than 5 or a sum of less than 8
- a product of greater than 8 or a product of less than 6
- a product of greater than 16 or a product of less than 9
- a product of greater than 6 or a product of less than 8
- a product of greater than 9 or a product of less than 16

28. a. How many integers from 1 to 600 are divisible by 2 or by 3?
 b. Find the probability that a random integer from 1 to 600 is divisible by neither 2 nor 3.
29. a. How many integers from 1 to 3500 are divisible by 5 or by 7?
 b. Find the probability that a random integer from 1 to 3500 is divisible by neither 5 nor 7.

For Exercises 30–35, use the given probability to find $P(E^c)$.

30. $P(E) = \frac{1}{3}$ 31. $P(E) = \frac{4}{11}$ 32. $P(E) = 0.782$
 33. $P(E) = 0.324$ 34. $P(E) = 0$ 35. $P(E) = 1$

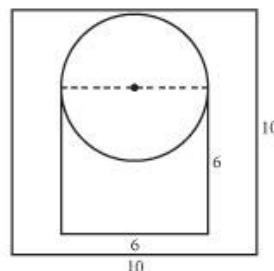
Find the probability of each event.

36. 2 heads *or* 2 tails appearing in 2 tosses of a coin
 37. 3 heads *or* 2 tails appearing in 3 tosses of a coin
 38. at least 2 heads appearing in 3 tosses of a coin
 39. at least 3 heads appearing in 4 tosses of a coin
40. A number cube is rolled 3 times. Find the probability of getting at least one 4.
41. In a group of 300 people surveyed, 46 like only cola A, 23 like only cola B, 18 like only cola C, 80 like both colas A and B, 66 like both colas A and C, 45 like both colas B and C, and 12 like all three colas. Find the probability that a randomly selected person from this survey likes none of these colas.

CHALLENGE

CONNECTION

42. **GEOMETRY** A circle with a radius of 3 and a 6×6 square are positioned inside a 10×10 square so that the top edge of the 6×6 square forms a diameter of the circle, as shown at right. A point inside the 10×10 square is selected at random. Find the probability of each event below.
- The point is within the circle.
 - The point is within the 6×6 square.
 - The point is within the 6×6 square *and* within the circle.
 - The point is within the 6×6 square *or* within the circle.



APPLICATION

POLITICS The table shows the composition of the 106th Congress of the United States (1999–2001) according to political party.

Find the probability that a randomly selected member of Congress is the following:

43. a House Democrat *or* a Senate Republican
 44. a House Republican *or* a Senate Democrat
 45. a Democrat *or* a Senator
 46. a Republican *or* a Senator

