

EXAMPLES
5 and 6

on pp. 719–720
for Exs. 26–32

CONDITIONAL PROBABILITY Let n be a randomly selected integer from 1 to 20. Find the indicated probability.

22. n is 2 given that it is even
23. n is 5 given that it is less than 8
24. n is prime given that it has 2 digits
25. n is odd given that it is prime

DRAWING CARDS Find the probability of drawing the given cards from a standard deck of 52 cards (a) with replacement and (b) without replacement.

26. A club, then a spade
27. A queen, then an ace
28. A face card, then a 6
29. A 10, then a 2
30. A king, then a queen, then a jack
31. A spade, then a club, then another spade

32. **TAKS REASONING** What is the approximate probability of drawing 3 consecutive hearts from a standard deck of 52 cards without replacement?

- (A) 0.0122 (B) 0.0129 (C) 0.0156 (D) 0.0166

33. **ERROR ANALYSIS** Events A and B are independent. Describe and correct the error in finding $P(A \text{ and } B)$.

$$P(A) = 0.4, P(B) = 0.5$$

$$P(A \text{ and } B) = 0.4 + 0.5 = 0.9$$



34. **TAKS REASONING** Flip a set of 3 coins and record the number of coins that come up heads. Repeat until you have a total of 10 trials.

- a. What is the experimental probability that a trial results in 2 heads?
b. Compare your answer from part (a) with the theoretical probability that a trial results in 2 heads.

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35. **REASONING** Let A and B be independent events. What is the relationship between $P(B)$ and $P(B|A)$? Explain.

36. **CHALLENGE** How many times must you roll two six-sided dice for there to be at least a 50% chance that you roll two 6's at least once?

PROBLEM SOLVING

EXAMPLES
3 and 4

on pp. 718–719
for Exs. 37–38

37. **SCHOOL BUS** Angela usually rushes to make it to the bus stop in time to catch the school bus, and will often miss the bus if it is early. The bus comes early to Angela's stop 28% of the time. What is the probability that the bus will come early at least once during a 5 day school week?

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38. **ENVIRONMENT** The table shows the numbers of species in the United States listed as endangered or threatened as of September, 2004. Find (a) the probability that a listed animal is a bird and (b) the probability that an endangered animal is a bird.

	Endangered	Threatened
Mammals	69	9
Birds	77	14
Reptiles	14	22
Amphibians	11	10
Other	219	74

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