

CH 13 REVIEW

Find the number of possible outcomes for each situation.

1

In a catalog of outdoor patio plans, there are 4 types of stone, 3 types of edgers, 5 dining sets and 6 grills. Carl plans to order 1 item from each category.

$$4 \cdot 3 \cdot 5 \cdot 6 = \boxed{360}$$

2 An English teacher has 6 short stories, 4 novels, and 23 poems to choose from. He plans to assign one of each to his class.

$$6 \cdot 4 \cdot 23 = \boxed{552}$$

3 Mr. Lindell is choosing his cable TV. He must choose one from each category.

$$16 \cdot 3 \cdot 3 \cdot 2 \cdot 2 \cdot 2 = \boxed{1152}$$

Cable TV Plans	Number of Choices
Channel packages	16
DVR system	3
Contract length	3
Service contract	2
Include phone	2
Include Internet	2

4 For her aquarium, Sandy needs to choose 1 of each: a fish, a plant, and pebbles. She can also add ~~an optional figurine~~, a "no fishing" sign and/or a pineapple house like Sponge Bob's. If there are 2 different color fish, 4 kinds of plants and 3 types of pebbles, how many different ways could she set up her aquarium?

$$2 \cdot 4 \cdot 3 \cdot 2 \cdot 2 = \boxed{96}$$

5 You are a YouTube sensation and own 7 different cars. If you drive a different one each day of the week, how many different ways can you select to drive them?

$$7P_7 \text{ or } 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = \boxed{5040}$$

Find the probability of each event.

6 You have a textbook for each of the following subjects: Spanish, English, Chemistry, Geometry, History and Psychology. If you choose 4 of these at random to arrange on a shelf, what is the probability that the Geometry textbook will be first from the left and the Chemistry textbook will be second from the left?

$$\frac{1}{6} \cdot \frac{1}{5} \cdot \frac{4}{4} \cdot \frac{3}{3} = \frac{12}{6P_4} = \frac{12}{360} = \boxed{\frac{1}{30}}$$

7 What is the probability that a 7-digit number generated using the digits 2, 3, 2, 5, 2, 7, and 3 is the number 222-3357?

$$\frac{7!}{3! \cdot 2!} = 420 = \boxed{\frac{1}{420}}$$

8 When 18 band students line up for the half time performance, what is the probability that Andrew is first and Cynthia is last in line?

$$\frac{16!}{18!} = \frac{1}{18 \cdot 17} = \boxed{\frac{1}{306}}$$

9 5 of the 18 different flowers are chosen at random to be planted in the front of the nursery. What is the probability that a rose, daisy, lily, poppy, and a tulip will be chosen?

$$\frac{1}{18C_5} = \boxed{\frac{1}{8568}}$$

10 Emily is giving away part of her international doll collection to charity. She has 20 dolls, each from a different country. If she selects 10 of them at random, what is the probability she chooses the ones from Ecuador, Paraguay, Chile, France, Spain, Sweden, Switzerland, Germany, Greece, and Italy?

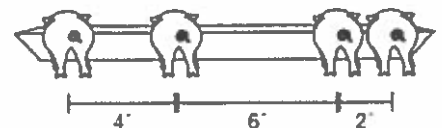
$$\frac{1}{20C_{10}} = \boxed{\frac{1}{184,756}}$$

11 A certain company plays Mozart's Eine Kleine Nachtmusik when its customers are on hold on the telephone. If the length of the complete recording is 2 hours long, what is the probability a customer put on hold will hear the Allegro movement which is 6 minutes and 31 seconds long?

SKIP

12 Four pigs are lined up at the feeding trough. What is the probability that when a fifth pig comes to eat it lines up between the second and third pig?

SKIP



SKIP 13-17

Point X is chosen at random on line LP. Find the probability of each event.

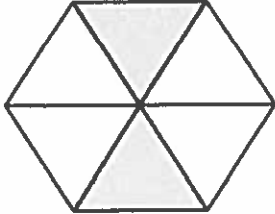
13 P(X in on LN)



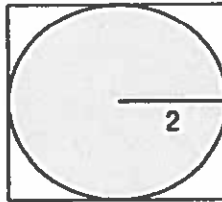
14 P(X in on MO)

Find the probability that a point chosen at random lies in the shaded region.

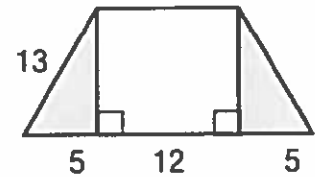
15



16



17

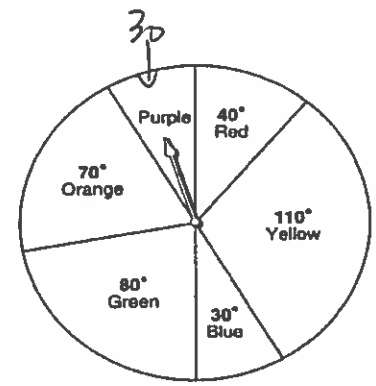


Use the spinner to find each probability. If the spinner lands on a line, it is spun again.

18 P(pointer lands on purple) $\frac{30}{360} = \boxed{\frac{1}{12}}$

19 P(pointer does NOT land on yellow) $1 - \frac{110}{360} = \boxed{\frac{25}{36}}$

20 P(pointer lands on blue or red) $\frac{30}{360} + \frac{40}{360} = \frac{70}{360} = \boxed{\frac{7}{36}}$



Find each probability.

21 From a bag of 5 red and 6 green marbles, a red marble is drawn and not replaced. Then a green marble is drawn.
 $P(R \& G) = P(R) \cdot P(G|R)$
 $= \frac{5}{11} \cdot \frac{6}{10} = \boxed{\frac{3}{11}}$

23 Two cards are drawn from a standard deck and not replaced. What is the probability both are face cards?
 Both 7s?
 $\frac{12}{52} \cdot \frac{11}{51} = \boxed{\frac{11}{221}}$ $\frac{4}{52} \cdot \frac{3}{51} = \boxed{\frac{1}{221}}$

25 Find the probability of rolling a pair of dice and their sum is less than 5. Find the probability if the sum is 10.
 $\frac{6}{36} = \boxed{\frac{1}{6}}$ $\frac{3}{36} = \boxed{\frac{1}{12}}$

27 A die is tossed. If the number rolled is a greater than 2, what is the probability that the number rolled is 3?
 $\boxed{\frac{1}{4}}$

22 A card is randomly chosen from a standard deck and then replaced and a second card is drawn. The first card is a club and the second card is a diamond.
 $P(C \& D) = P(C) \cdot P(D)$
 $= \frac{13}{52} \cdot \frac{13}{52} = \boxed{\frac{1}{16}}$

24 A card is randomly chosen from a standard deck. What is the probability it is a 9 or a 10? What is the probability it is NOT a card 2 through 10?
 $\frac{4}{52} + \frac{4}{52} = \boxed{\frac{2}{13}}$ $1 - \frac{36}{52} = \boxed{\frac{4}{13}}$

26 Find the probability of rolling a pair of dice and their sum is 8 or 12. Find the probability if the sum is 6 or doubles are rolled.
 $\frac{6}{36} = \boxed{\frac{1}{6}}$ $\frac{5}{36} + \frac{6}{36} - \frac{1}{36} = \boxed{\frac{10}{18}}$

28 What is the probability of selecting a number from a list of integers 1 to 20 and getting a prime or even number?
 $\frac{8}{20} + \frac{10}{20} - \frac{1}{20} = \boxed{\frac{17}{20}}$

29 You reach into a jar to grab a gumball. The jar contains 25 blue, 30 red, 11 yellow, 9 white and 10 pink gumballs. What is the probability that the first gumball you pick is white or yellow?

$\frac{9}{85} + \frac{11}{85} = \frac{20}{85} = \boxed{\frac{4}{17}}$