2. How many different four-digit numbers can be formed by rearranging the four digits in 2014?

(A) 4 (B) 18 (C) 16 (D) 24 (E) 81

4. Alex, Bob, Cathy, Danny, Emily, and Frank are chosen for the team to participate in the annual four-person-team basketball tournament. In how many ways can the four starters be chosen?

(A) 12 (B) 15 (C) 16 (D) 18 (E) 10

5. There are sixty teams compete in an annual basketball tournament. The losing team of each game is eliminated from the tournament. How many games will be played to determine the winner?

(A) 44 (B) 57 (C) 58 (D) 59 (E) 56

8. Find the number of three-digit positive integers whose digits total 24.
(A) 9 (B) 10 (C) 8 (D) 7 (E) 6

12. Nancy usually leaves her cell phone on. If her cell phone is on but she is not actually using it, the battery will last for 120 hours. If she is using it constantly, the battery will last for only 15 hours. Since the last recharge, her phone has been on 45 hours, and during that time she has used it for 240 minutes. If she doesn't talk any more but leaves the phone on, how many more hours will the battery last?
(A) 57 (B) 47 (C) 120 (D) 37 (E) 43

13 Alex, Bob and Cathy are friends with different ages. Exactly one of the following statements is true.

I. Bob is the oldest.

II. Alex is not the oldest.
III. Cathy is not the youngest.

Rank the friends from the youngest to the oldest.

(A) Bob, Alex, Cathy (B) Alex, Bob, Cathy (C) Alex, Cathy, Bob,
(D) Cathy, Bob, Alex (E) Bob, Cathy, Alex

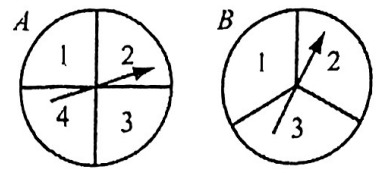
17. Five friends have a total of 12 identical pencils, and each one has at least two pencils. In how many ways can this happen?
(A) 10 (B) 13 (C) 16 (D) 15 (E) 12

18. Five friends compete in a dart-throwing contest. Each one has two darts to throw at the same circular target, and each individual's score is the sum of the scores in the target regions that are hit. The scores for the target regions are the whole numbers 1 through 10. Each throw hits the target in a region with a different value. The scores are: Alice 12 points, Ben 4 points, Cindy 8 points, Dave 13 points, and Ellen 18 points. Who hits the region worth 7 points?
(A) Alice (B) Ben (C) Cindy (D) Dave (E) Ellen

19. A whole number larger than 2 leaves a remainder of 3 when divided by each of the numbers 4, 5, 6 and 7. The smallest such number lies between which two numbers?
(A) 300 and 350 (B) 400 and 450 (C) 200 and 229
(D) 100 and 149 (E) 500 and 569

20. Four-Ninths of the people in a room are seated in Seven-Elevenths of the chairs. The rest of the people are standing. If there are 16 empty chairs, how many people are in the room?
(A) 42 (B) 38 (C) 24 (D) 63 (E) 66

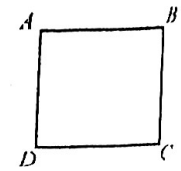
21. Spinners A and B are spun. On each spinner, the arrow is equally likely to land on each number. What is the probability that the sum of the two spinners' numbers is odd?

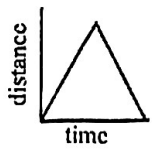


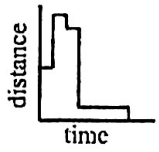
(A) 1/4 (B) 1/3 (C) 1/5 (D) 1/2 (E) 3/4

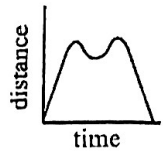
22. At a special party there are only single women, married men with their wives, and two babies for each couple. The probability that a randomly selected woman is single is 4/11. What fraction of the people in the room are babies?
(A) 4/11 (B) 7/16 (C) 3/8 (D) 5/12 (E) 7/30

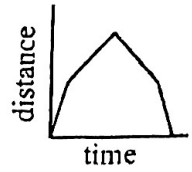
23. Tim runs counterclockwise around square block *ADCB*. He lives at corner *A*. Which graph could represent his straight-line distance from home?

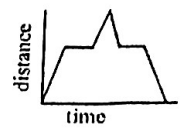


(A) 

(B) 

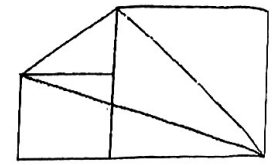
(C) 

(D) 

(E) 

24. In the figure, the larger one of the two squares next to each other has the side length of 20 cm. Find the shaded area.

(A) 100 (B) 150 (C) 200 (D) 300 (E) undetermined.



25. Two 20 × 20 squares intersect at right angles, bisecting their intersecting sides, as shown. The circle's diameter is the segment between the two points of intersection. What is the area of the shaded region created by removing the circle from the squares?

(A) $160 - 50\pi$ (B) $200 - 50\pi$ (C) $280 - 40\pi$
(D) $700 - 50\pi$ (E) $500 - 25\pi$