6. Which of the following figures has the greatest number of lines of symmetry?

(A) equilateral triangle

(B) square

12. Of the 640 balls in a large bag, 85% are red and the rest are blue. How many of the red balls must be removed from the bag so that 75% of the remaining balls are red?
(A) 250 (B) 500 (C) 275 (D) 256 (E) 150

13. The lengths of the sides of a triangle measured in inches are three consecutive even integers. The length of the shortest side is 25% of the perimeter. What is the length of the longest side?

(A) 4 (B) 6 (C) 9 (D) 12 (E) 10

14. What is the sum of the prime factors of 2013?

(A) 674 (B) 77 (C) 75 (D) 67 (E) 201

15. A jar contains five different colors of gum drops: 25% are blue, 30% are brown, 3% are red, 17% are yellow and the other 40 gum drops are green. If half of brown gum drops are replaced by blue gum drops, how many of the gum drops will be blue?

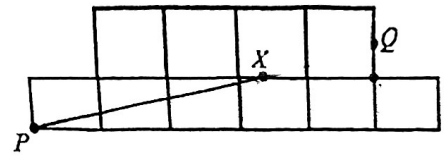
(A) 35 (B) 36 (C) 64 (D) 48 (E) 68

16. The area of a square is $\frac{16}{\pi}$ of the area of a circle. Find the ratio of the side length of the square to the diameter of the circle.

(A) 3 (B) 2 (C) $\pi$ (D) $\sqrt{2\pi}$ (E) 4

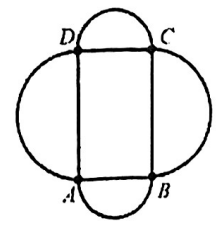
17. The diagram shows an octagon consisting of 10 unit squares. The portion below $PQ$ is a unit square and a triangle with base 5. Find the ratio $QX/XP$ if $PQ$ bisects the area of the octagon.

(A) $\frac{3}{4}$ (B) $\frac{1}{2}$ (C) $\frac{2}{3}$ (D) $\frac{3}{5}$ (E) $\frac{2}{5}$



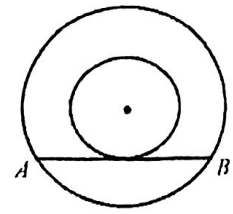

18. A decorative shape is made up of a rectangle with semicircles on each end. The ratio of $AD$ to $AB$ is 7 : 4 and $AB = 40$ inches. Find the ratio of the area of the rectangle to the combined areas of the semicircles.

(A) 7: 4 (B) 3 : 2 (C) $\frac{112}{65\pi}$ (D $\frac{30}{\pi}$ (E) $\frac{37}{19\pi}$



19. The two circles are concentric circles with center $C$. Chord $AB$ is tangent to the inner circle at $D$ and $AB = 22$. Find the area between the two circles.

(A) $144\pi$. (B) $100\pi$. (C) $121\pi$. (D) $169\pi$.




20. In a room, 6/7 of all the people are wearing gloves, and 5/9 of the people are wearing hats. What is the minimum number of people in the room wearing both a hat and gloves?

(A) 54 (B) 36 (C) 26 (D) 36 (E) 68

21. Ping is an avid reader. She bought a copy of the bestseller Math is Fun. On the first day, Ping read 2/5 of the pages plus 55 more, and on the second day she read 3/7 of the remaining pages, plus 12 pages. On the third day, she read 1/4 of the remaining pages, plus 8 pages. She then realized that there were only 16 pages left to read, which she read the next day. How many pages are in this book?

(A) 120 (B) 180 (C) 220 (D) 300 (E) 360

22. The hundreds digit of a three-digit number is 7 more than the units digit. The digits of the three-digit number are reversed, and the resulting number is subtracted from the original three-digit number. What is the units digit of the final result?

(A) 0 (B) 2 (C) 4 (D) 6 (E) 3

24. What is the correct ordering of the three numbers $2^{40}$, $3^{28}$, and $4^{19}$ ?

(A) $4^{19} < 2^{40} < 3^{28}$. (B) $4^{19} < 3^{28} < 2^{40}$. (D) $3^{28} < 4^{19} < 2^{40}$.

(B) $3^{28} < 2^{40} < 4^{19}$. (E) $2^{40} < 4^{19} < 3^{28}$.

25. Every day at school, Alex climbs a total of 8 stairs. Alex can take stairs 1, 2, 3, or 4 at a time. For example, Alex could climb 3, then 1, then 4 stairs. In how many ways can Alex climb the 8 stairs?

(A) 56 (B) 18 (C) 20 (D) 22 (E) 108