1988 Q1

1. The diagram shows part of a scale of a measuring device. The arrow indicates an approximate reading of

A) 10.05 B) 10.15 C) 10.25

D) 10.3 E) 10.6

2002 Q1

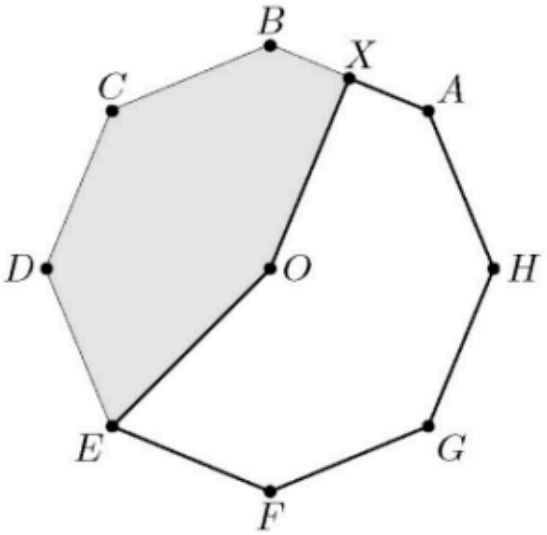
1. A circle and two distinct lines are drawn on a sheet of paper. What is the largest possible number of points of intersection of these figures?

(A) 2 **(B)** 3 **(C)** 4 **(D)** 5 **(E)** 6

2015 Q2

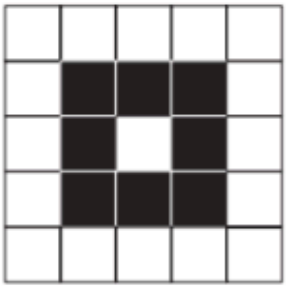
2. Point O is the center of the regular octagon $ABCDEFGH$, and X is the midpoint of side $\overline{AB}$. What fraction of the area of the octagon is shaded?

(A) $\frac{11}{32}$ **(B)** $\frac{3}{8}$ **(C)** $\frac{13}{32}$ **(D)** $\frac{7}{16}$ **(E)** $\frac{15}{32}$



2011 Q3

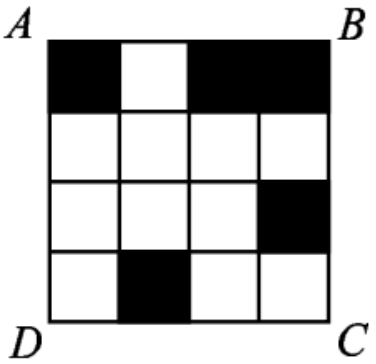
3. Extend the square pattern of 8 black and 17 white square tiles by attaching a border of black tiles around the square. What is the ratio of black tiles to white tiles in the extended pattern?



(A) 8 : 17 **(B)** 25 : 49 **(C)** 36 : 25 **(D)** 32 : 17 **(E)** 36 : 17

2005 Q3

3. What is the minimum number of small squares that must be colored black so that a line of symmetry lies on the diagonal $\overline{BD}$ of square $ABCD$?



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

1990 Q3

3. What fraction of the square is shaded?

A) $\frac{1}{3}$ B) $\frac{2}{5}$ C) $\frac{5}{12}$ D) $\frac{3}{7}$ E) $\frac{1}{2}$

2008 Q4

4. In the figure, the outer equilateral triangle has area 16, the inner equilateral triangle has area 1, and the three trapezoids are congruent. What is the area of one of the trapezoids?

(A) 3 **(B)** 4 **(C)** 5 **(D)** 6 **(E)** 7

1988 Q4

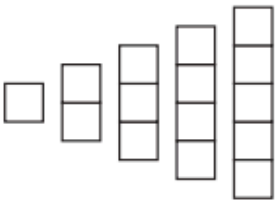
4. The figure consists of alternating light and dark squares. The number of dark squares exceeds the number of light squares by

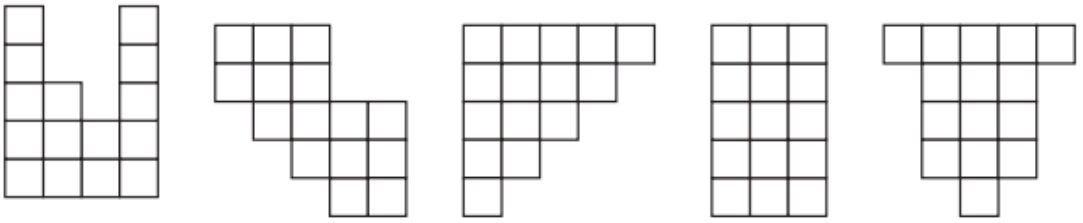
A) 7 B) 8 C) 9

D) 10 E) 11

2009 Q4

4. The five pieces shown at right can be arranged to form four of the five figures below. Which figure **cannot** be formed?

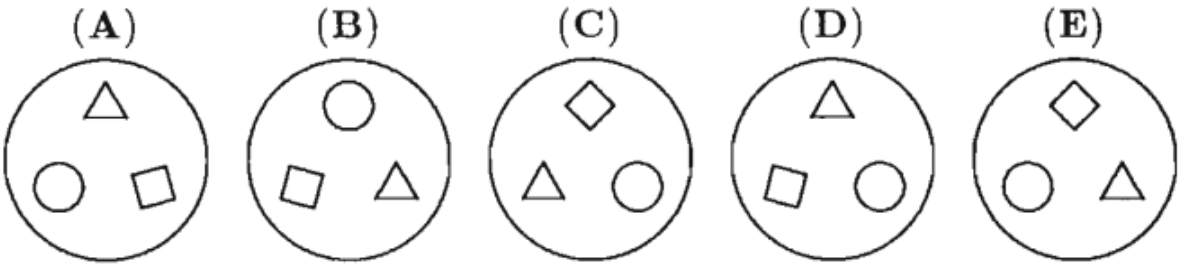




(A) (B) (C) (D) (E)

1994 Q4

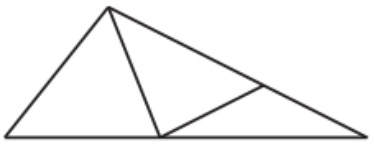
4. Which of the following represents the result when the figure shown at the right is rotated clockwise 120° about its center?



(A) (B) (C) (D) (E)

1998 Q4

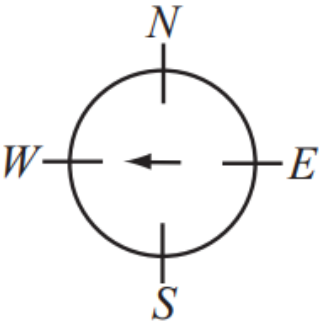
4. How many triangles are in this figure?
(Some triangles may overlap other triangles.)



(A) 9 **(B)** 8 **(C)** 7 **(D)** 6 **(E)** 5

2006 Q4

4. Initially, a spinner points west. Chenille moves it clockwise $2\frac{1}{4}$ revolutions and then counterclockwise $3\frac{3}{4}$ revolutions. In what direction does the spinner point after the two moves?

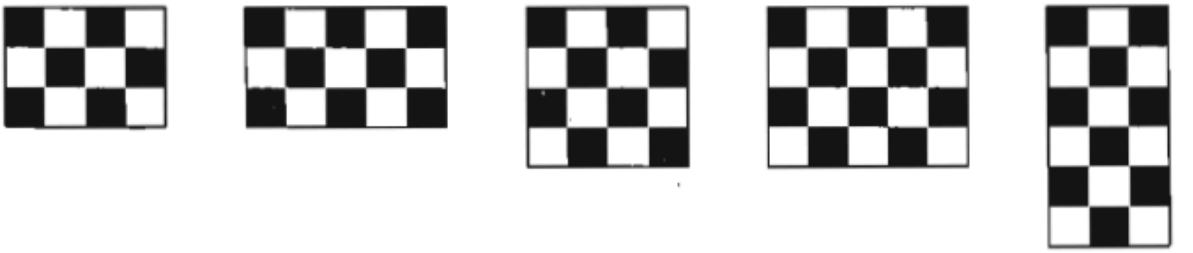


(A) north **(B)** east **(C)** south **(D)** west **(E)** northwest

1991 Q5

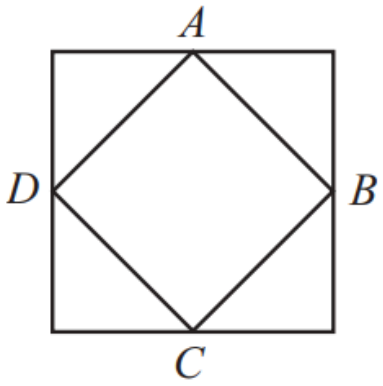
5. A "domino" is made up of two small squares:  .
Which of the "checkerboards" illustrated below CANNOT be covered exactly and completely by a whole number of non-overlapping dominoes?

(A) 3×4 **(B)** 3×5 **(C)** 4×4 **(D)** 4×5 **(E)** 6×3



2006 Q5

5. Points A, B, C and D are midpoints of the sides of the larger square. If the larger square has area 60, what is the area of the smaller square?



(A) 15 **(B)** 20 **(C)** 24 **(D)** 30 **(E)** 40