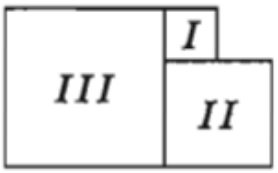
1 / 23

1995 Q6

6. Figures I, II and III are squares. The perimeter of I is 12 and the perimeter of II is 24. The perimeter of III is

(A) 9 **(B)** 18 **(C)** 36 **(D)** 72 **(E)** 81

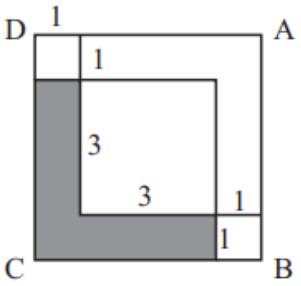


2 / 23

2000 Q6

6. Figure $ABCD$ is a square. Inside this square three smaller squares are drawn with side lengths as labeled. the area of the shaded L-shaped region is

(A) 7 **(B)** 10 **(C)** 12.5 **(D)** 14 **(E)** 15

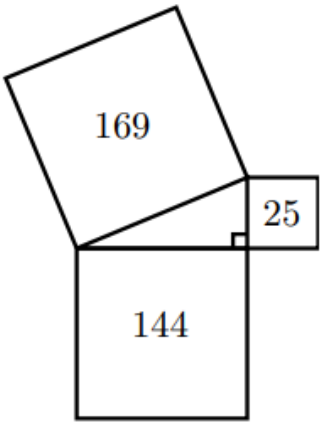


3 / 23

2003 Q6

6. Given the areas of the three squares in the figure, what is the area of the interior triangle?

(A) 13 **(B)** 30 **(C)** 60 **(D)** 300 **(E)** 1800

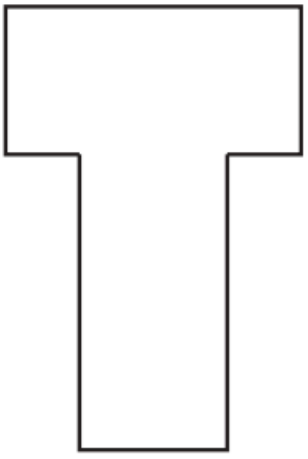


4 / 23

2006 Q6

6. The letter T is formed by placing two 2 inch $\times$ 4 inch rectangles next to each other, as shown. What is the perimeter of the T, in inches?

(A) 12 **(B)** 16 **(C)** 20 **(D)** 22 **(E)** 24

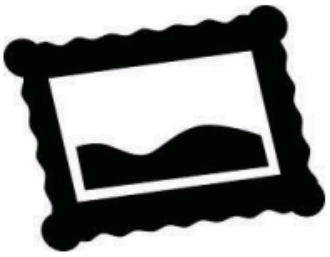


5 / 23

2012 Q6

6. A rectangular photograph is placed in a frame that forms a border two inches wide on all sides of the photograph. The photograph measures 8 inches high and 10 inches wide. What is the area of the border, in square inches?

(A) 36 (B) 40 (C) 64 (D) 72 (E) 88



6 / 23

2014 Q6

6. Six rectangles each with a common base width of 2 have lengths of $1, 4, 9, 16, 25,$ and 36. What is the sum of the areas of the six rectangles?

(A) 91 (B) 93 (C) 162 (D) 182 (E) 202

7 / 23

1997 Q7

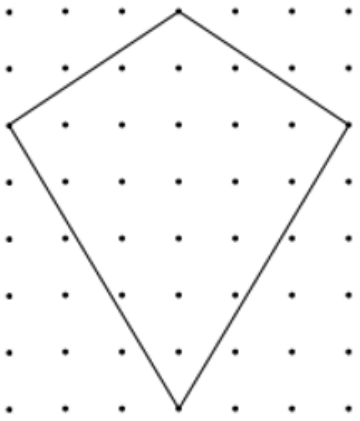
7. The area of the smallest square that will contain a circle of radius 4 is

(A) 8 (B) 16 (C) 32 (D) 64 (E) 128

8 / 23

2001 Q7

To promote her school's annual Kite Olympics, Genevieve makes a small kite and a large kite for a bulletin board display. The kites look like the one in the diagram. For her small kite Genevieve draws the kite on a one-inch grid. For the large kite she triples both the height and width of the entire grid.



7. What is the number of square inches in the area of the small kite?

(A) 21 (B) 22 (C) 23 (D) 24 (E) 25

2005 Q7

7. Bill walks $\frac{1}{2}$ mile south, then $\frac{3}{4}$ mile east, and finally $\frac{1}{2}$ mile south. How many miles is he, in a direct line, from his starting point?

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

2006 Q7

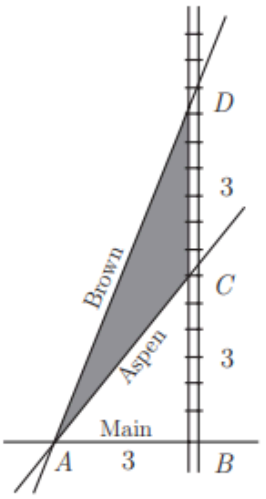
7. Circle X has a radius of π. Circle Y has a circumference of 8π. Circle Z has an area of 9π. List the circles in order from smallest to largest radius.

(A) X, Y, Z **(B)** Z, X, Y **(C)** Y, X, Z **(D)** Z, Y, X **(E)** X, Z, Y

11 / 23

2009 Q7

7. The triangular plot of land ACD lies between Aspen Road, Brown Road and a railroad. Main Street runs east and west, and the railroad runs north and south. The numbers in the diagram indicate distances in miles. The width of the railroad track can be ignored. How many square miles are in the plot of land ACD?

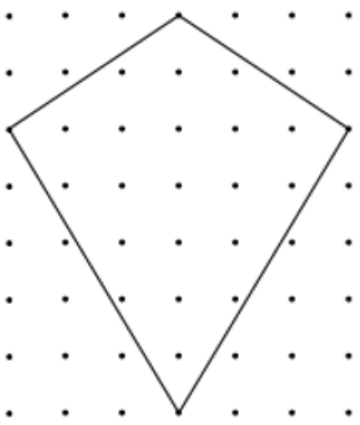


(A) 2 **(B)** 3 **(C)** 4.5 **(D)** 6 **(E)** 9

12 / 23

2001 Q8

To promote her school's annual Kite Olympics, Genevieve makes a small kite and a large kite for a bulletin board display. The kites look like the one in the diagram. For her small kite Genevieve draws the kite on a one-inch grid. For the large kite she triples both the height and width of the entire grid.



7. What is the number of square inches in the

8. Genevieve puts bracing on her large kite in the form of a cross connecting opposite corners of the kite. How many inches of bracing material does she need?

(A) 30 (B) 32 (C) 35 (D) 38 (E) 39

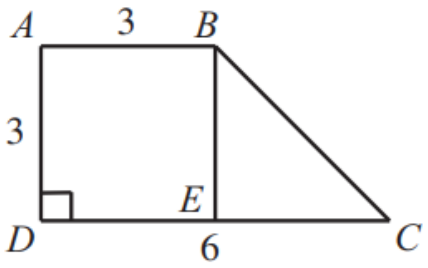
2001 Q9

9. The large kite is covered with gold foil. The foil is cut from a rectangular piece that just covers the entire grid. How many square inches of waste material are cut off from the four corners?

(A) 63 (B) 72 (C) 180 (D) 189 (E) 264

2007 Q8

8. In trapezoid $ABCD$, $\overline{AD}$ is perpendicular to $\overline{DC}$, $AD = AB = 3$, and $DC = 6$. In addition, E is on $\overline{DC}$, and $\overline{BE}$ is parallel to $\overline{AD}$. Find the area of $\triangle BEC$.



(A) 3 **(B)** 4.5 **(C)** 6 **(D)** 9 **(E)** 18

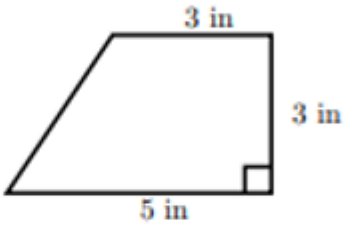
2003 Q8

Problems 8, 9 and 10 use the data found in the accompanying paragraph and figures.

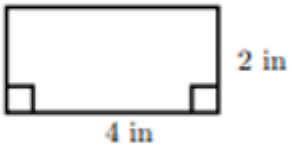
Bake Sale

Four friends, Art, Roger, Paul and Trisha, bake cookies, and all cookies have the same thickness. The shapes of the cookies differ, as shown.

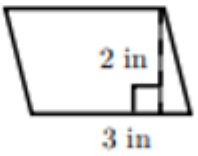
- Art's cookies are trapezoids:



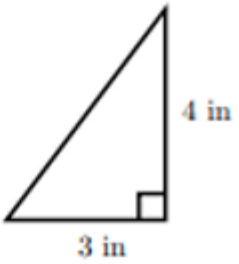
- Roger's cookies are rectangles:



- Paul's cookies are parallelograms:



- Trisha's cookies are triangles:



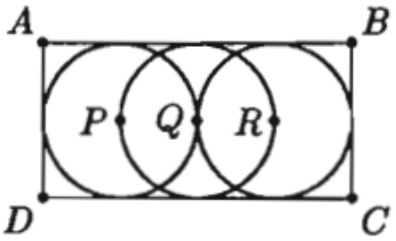
Each friend uses the same amount of dough, and Art makes exactly 12 cookies.

8. Who gets the fewest cookies from one batch of cookie dough?

(A) Art **(B)** Paul **(C)** Roger **(D)** Trisha **(E)** There is a tie for fewest.

1995 Q9

9. Three congruent circles with centers P, Q and R are tangent to the sides of rectangle $ABCD$ as shown. The circle centered at Q has diameter 4 and passes through points P and R. The area of the rectangle is



(A) 16 **(B)** 24 **(C)** 32

(D) 64 **(E)** 128

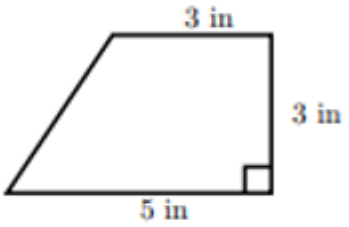
2003 Q9

Problems 8, 9 and 10 use the data found in the accompanying paragraph and figures.

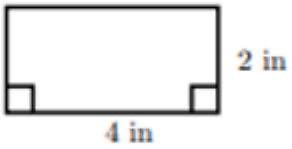
Bake Sale

Four friends, Art, Roger, Paul and Trisha, bake cookies, and all cookies have the same thickness. The shapes of the cookies differ, as shown.

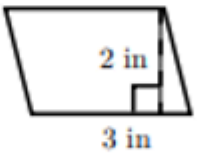
- Art's cookies are trapezoids:



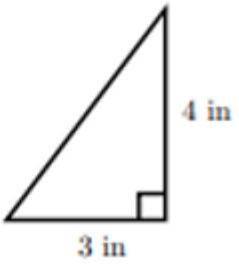
- Roger's cookies are rectangles:



- Paul's cookies are parallelograms:



- Trisha's cookies are triangles:



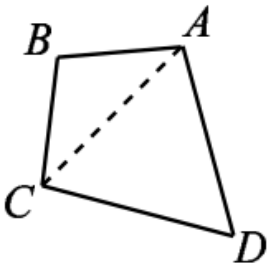
Each friend uses the same amount of dough, and Art makes exactly 12 cookies.

9. Art's cookies sell for $60\,¢$ each. To earn the same amount from a single batch, how much should one of Roger's cookies cost?

(A) $18\,¢$ **(B)** $25\,¢$ **(C)** $40\,¢$ **(D)** $75\,¢$ **(E)** $90\,¢$

2005 Q9

9. In quadrilateral $ABCD$, sides $\overline{AB}$ and $\overline{BC}$ both have length 10, sides $\overline{CD}$ and $\overline{DA}$ both have length 17, and the measure of angle ADC is 60°. What is the length of diagonal $\overline{AC}$?



(A) 13.5 **(B)** 14 **(C)** 15.5 **(D)** 17 **(E)** 18.5

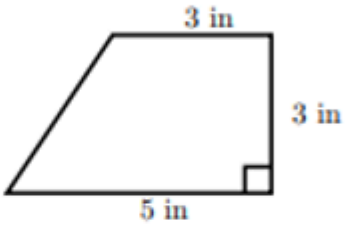
2003 Q10

Problems 8, 9 and 10 use the data found in the accompanying paragraph and figures.

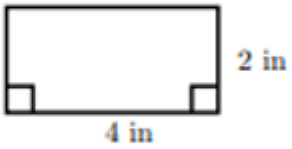
Bake Sale

Four friends, Art, Roger, Paul and Trisha, bake cookies, and all cookies have the same thickness. The shapes of the cookies differ, as shown.

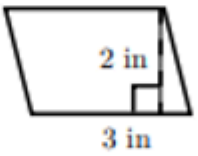
- Art's cookies are trapezoids:



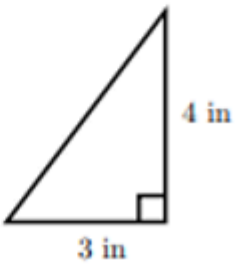
- Roger's cookies are rectangles:



- Paul's cookies are parallelograms:



- Trisha's cookies are triangles:



Each friend uses the same amount of dough, and Art makes exactly 12 cookies.

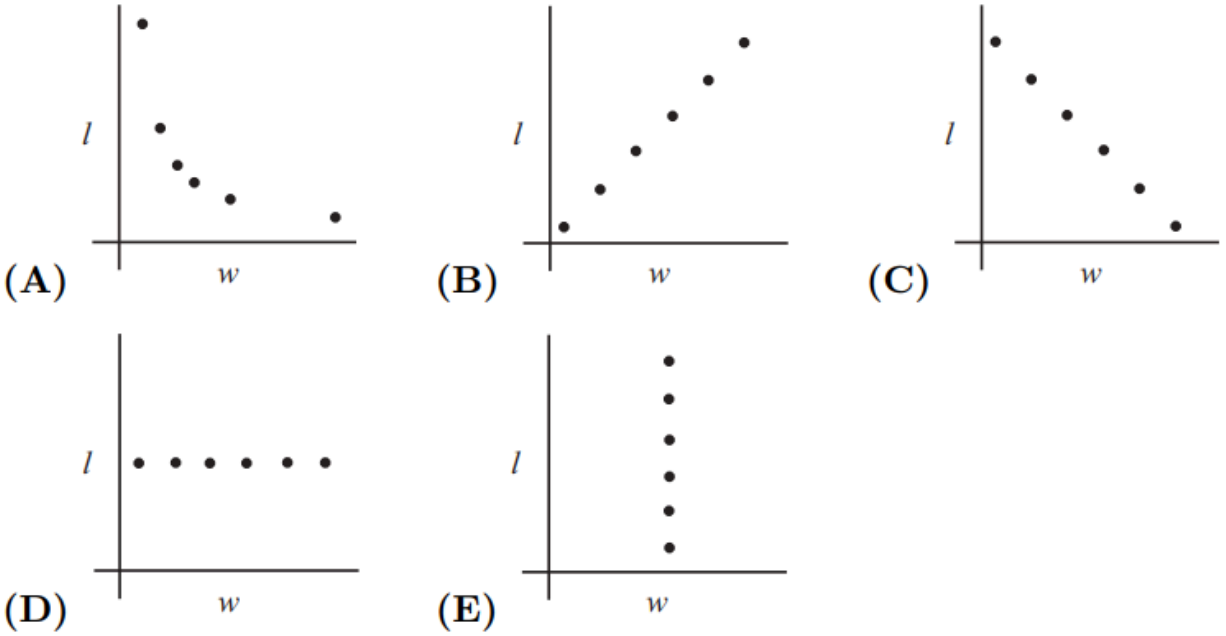
10. How many cookies will be in one batch of Trisha's cookies?

(A) 10 **(B)** 12 **(C)** 16 **(D)** 18 **(E)** 24

10. **(E)** The triangle's area is 6 in^2, or half that of the trapezoid. So Trisha will make twice as many cookies as Art, or 24.

2006 Q10

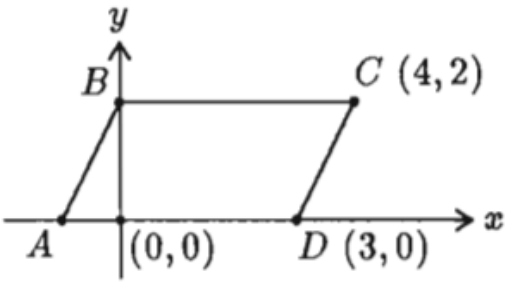
10. Jorge's teacher asks him to plot all the ordered pairs (w, l) of positive integers for which w is the width and l is the length of a rectangle with area 12. What should his graph look like?



1991 Q10

10. The area in square units of the region enclosed by parallelogram $ABCD$ is

(A) 6 **(B)** 8 **(C)** 12
(D) 15 **(E)** 18



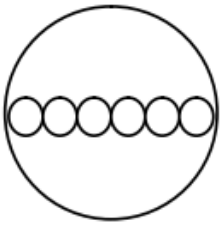
10. A picture 3 feet across is hung in the center of a wall that is 19 feet wide. How many feet from the end of the wall is the nearest edge of the picture?

A) 1½ B) 8 C) 9½ D) 16 E) 22

1986 Q10

2010 Q10

10. Six pepperoni circles will exactly fit across the diameter of a 12-inch pizza when placed as shown. If a total of 24 circles of pepperoni are placed on this pizza without overlap, what fraction of the pizza is covered by pepperoni?



(A) $\frac{1}{2}$ **(B)** $\frac{2}{3}$ **(C)** $\frac{3}{4}$ **(D)** $\frac{5}{6}$ **(E)** $\frac{7}{8}$