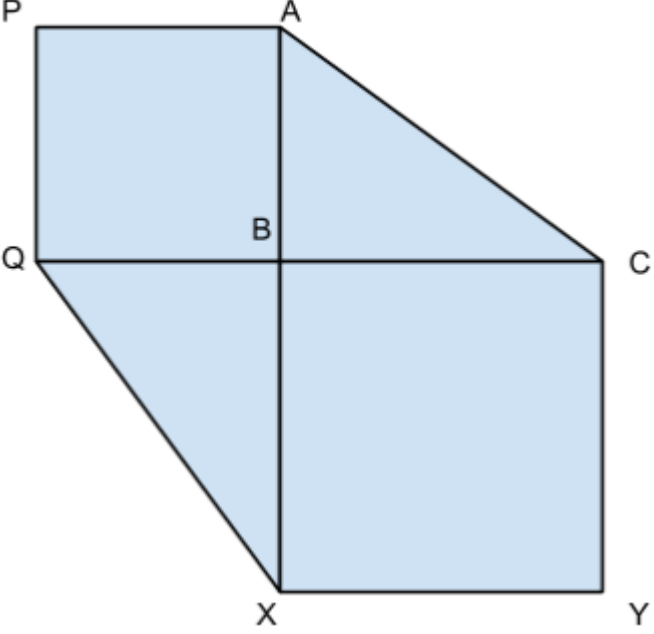


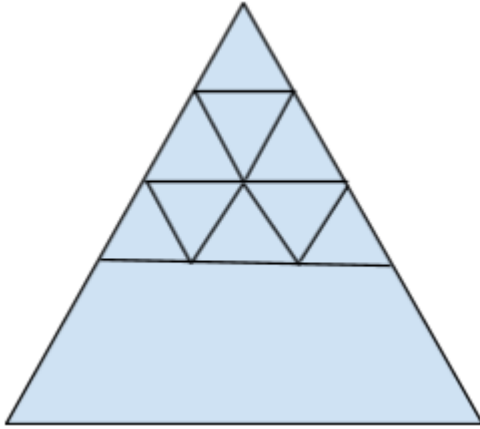


Geometry 5th/6th

1	<p>PQBA and BCXY are squares. If $AB = 3$, $BC = 4$, and $AC = 5$, what is the length of QX?</p> 
2	<p>You are standing on the edge of a circular room. If you can run at a constant speed, what is the smallest number of times you need to run across the diameter of the room so that it takes you longer than it would to run around the room 10 times?</p>
3	<p>If a right triangle has sides of length 5 and 6, what is the largest possible area of the triangle?</p>
4	<p>A fly lands on the outer rim of a wheel that does not touch the ground. If the wheel turns 3 revolutions in a second, and the radius of the wheel is 2 meters, what is the distance the fly has traveled in 4 seconds? Answer in terms of pi.</p>
5	<p>Quadrilateral ABCD is inscribed in circle O. Angles A and B are complementary. It is known that 5 pennies add up to a nickel, and 5 nickels add up to a quarter, and 4 quarters add up to a dollar. Additionally it is known that the sum of the first n terms of the sequence : 1,2,4,... add up to one less than the $(n+1)$th term. What is the sum of angles A and B in degrees?</p>
6	<p>Triangle ABC has area 16. What is the area of the triangle with sides twice as long as ABC's sides?</p>
7	<p>A rectangle has height 8 and width 10. A painter wants to paint along one edge of the rectangle. His paintbrush has width 2.5. With only one straight stroke, what is the maximum area he can paint?</p>
8	<p>If a circle has a diameter of 8, what is the length of the longest chord?</p>

9

Foris the Frenchman says that there are 12 triangles in the following figure. What is the positive difference between the actual amount of triangles and Foris's guess?



10

You are in a 2D plane. You start at point $(10,3)$. You move down three units, to the right two units, and to the left 5 units. Where are you now? Express your answer in the form (x,y) .