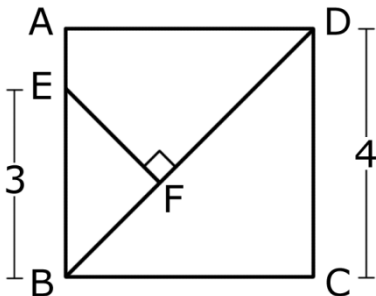
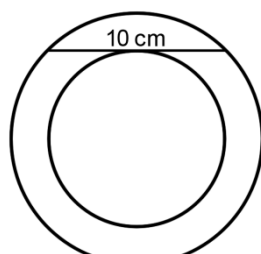
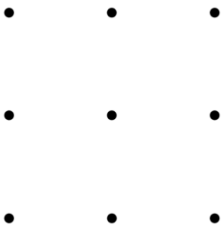
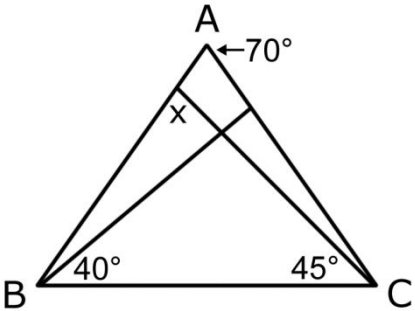




Knights of Pi Math Tournament – Dec. 12, 2009  
Geometry 7th/8th

1	What is the area of a square with side length 43?
2	What is the circumference of a circle with radius 5 meters?
3	Find the area of $AEFD$ given that $ABCD$ is a square. 
4	Mr. Vu has a rectangular pool measuring 8.5 meters by 11 meters. He decides to lay a cement border around it so that the border is 1.5 meters wide and 0.5 meters deep. What is the volume of cement he needs, in cubic meters?
5	The lines $y = x$ and $y = \frac{-(x-9)}{2}$ form a triangle in the first quadrant with the $y$ -axis. What is the area of this triangle? <i>Express your answer as a decimal.</i>
6	Brian has a large wooden cube made of 1000 smaller cubes, each measuring 1 inch on a side. He paints all six surfaces of the large cube, removes all of the smaller cubes he painted, and repeats the process until there are no more cubes to paint. When he finishes, how many square inches of wood has he painted?
7	Two concentric circles are drawn, as shown. A chord of the outer circle that is tangent to the inner circle measures 10 cm in length. What is the area of the region between the two circles? 

8	<p>How many distinct triangles can be drawn on this set of points if every vertex lies on a point?</p> 
9	<p>If <math>\triangle ABC</math> is an isosceles triangle such that <math>AB = AC</math>, what is the degree measure of angle <math>x</math>?</p> 
10	<p>Kevin's magical chocolate-eating goat is tied to an outer corner of a rectangular barn that measures 25 feet by 20 feet. The rope tying the goat to the barn is 30 feet long. If the barn is located in an infinite field of chocolate that is three inches thick, how many cubic feet of chocolate can Kevin's goat eat?</p>