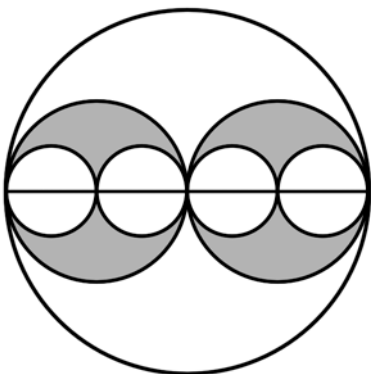


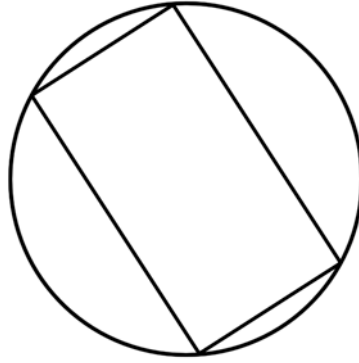


Knights of Pi Math Tournament – Dec. 4, 2010
Geometry 5th/6th

1	A triangle has sides with lengths of 3 units, 6 units, and 8 units. What is the perimeter of this triangle?
2	A rectangular box has dimensions of 3 cm, 4 cm, and 5 cm. What is the volume of this box?
3	While walking to class one morning, Kris finds a coin from the faraway country of Krzyszstan. If the coin has a circumference of π centimeters, what is the area of the top face of the coin?
4	Brian's mini Rubik's cube has four squares on each face, with each square having a side length of 1 cm. What is the volume of the Rubik's cube, in cubic centimeters?
5	I have a stack of CDs in a perfectly fitted cylindrical container. Each CD has a circumference of 10π cm and a thickness of 3 mm. If there are 50 CDs in the stack, what is the volume of the container, in cubic centimeters?
6	Andrew has a circle of radius 4. He inscribes two smaller circles inside of it, along the diameter, and repeats this process with the smaller circles. What is the area of the shaded region? 
7	Austin has a rectangular box of chocolates. Unfortunately, the box is made of clear plastic, so everyone else in Math Club can see into it. Since Austin doesn't want to share, he decides to cover all surfaces of the box with paper. If the box measures 4 inches by 5 inches by 9 inches, and Austin does not overlap any paper, how much paper must he use, in square inches?
8	If a floor that is 8 feet by 9 feet is to be tiled by 6 inch by 3 inch tiles, how many tiles will be required to tile the entire floor?

9

A rectangle is inscribed in a circle of radius 10 inches. If one of the rectangle's sides measures 12 inches, what is the perimeter of the rectangle, in inches?



10

Amy goes on vacation to Flatland. On her way to the hotel, she happens upon a rectangular garden measuring 4 feet by 9 feet with a circular hoop tangent to three of the sides, as shown. She rolls the hoop to the other side of the garden along the garden's southern edge. How many revolutions does the hoop make?

