

Hong Kong Mathematics Olympiad 2013/14

Heat Event (Geometric Construction)

香港数学竞赛 2013/14

初赛（几何作图）

1. Figure 1 shows a $\triangle ABC$. Construct a circle with centre O inside the triangle such that the three sides of the triangle are tangents to the circle.

图一所示为一个 $\triangle ABC$ 。试在该三角形内，构造一个圆心为 O 的圆，使三角形三条边均为该圆的切线。

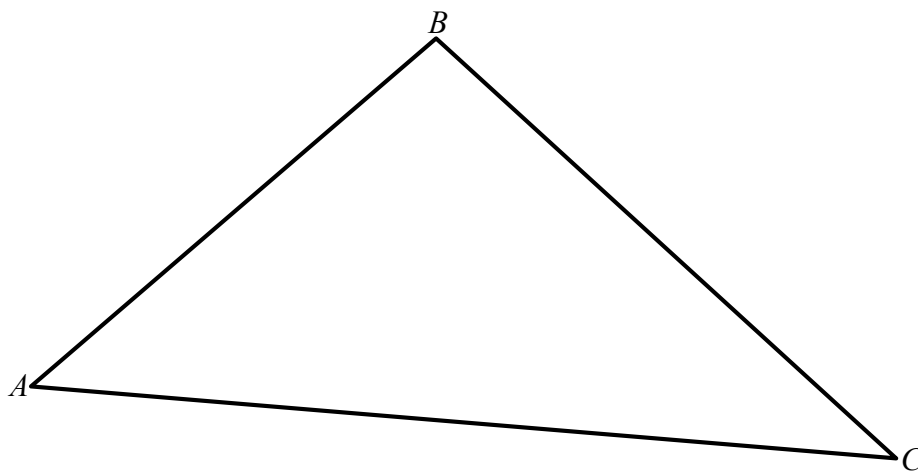


Figure 1

图一

2. Figure 2 shows a rectangle $PQRS$. Construct a square of area equal to that of the rectangle.

图二所示为一个长方形 $PQRS$ 。试构造一个面积与该长方形面积相等的正方形。



Figure 2
图二

3. Figure 3 shows two line segments AB and AC intersecting at the point A . Construct two circles of different sizes between them such that
- they touch each other at a point; and
 - the lines AB and AC are tangents to both circles.

图三所示为两相交于 A 点的线段 AB 及 AC 。试在它们之间构造两个大小不同的圆使得

- 该两圆相交于一点；及
- 线段 AB 和 AC 均为该两圆的切线。

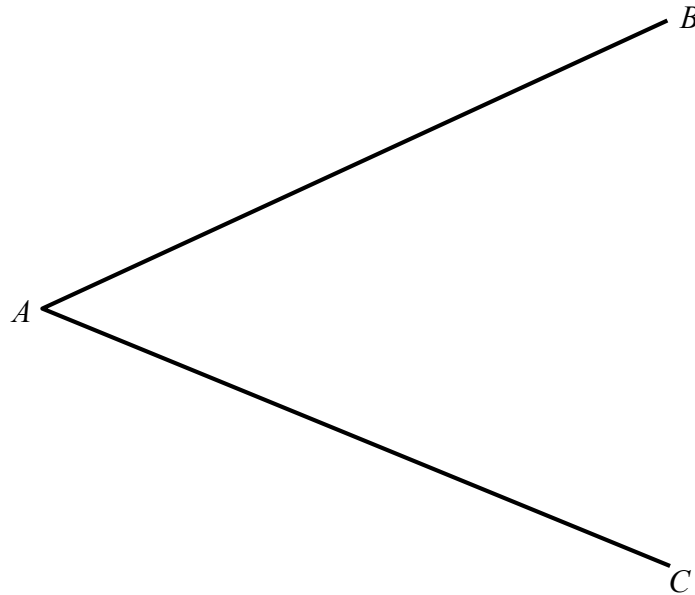


Figure 3

图三

END

完