

Hong Kong Mathematics Olympiad 2018/19

Heats (Geometric Construction)

香港数学竞赛 2018/19

初赛（几何作图）

1. Figure 1 shows three circles with equal radius which are pairwise tangent to each other. Construct a circle which will touch each circle in the figure at a point.

图一所示为三个半径相等且两两相切的圆。试作一圆使得它与图中每一圆相切于一点。

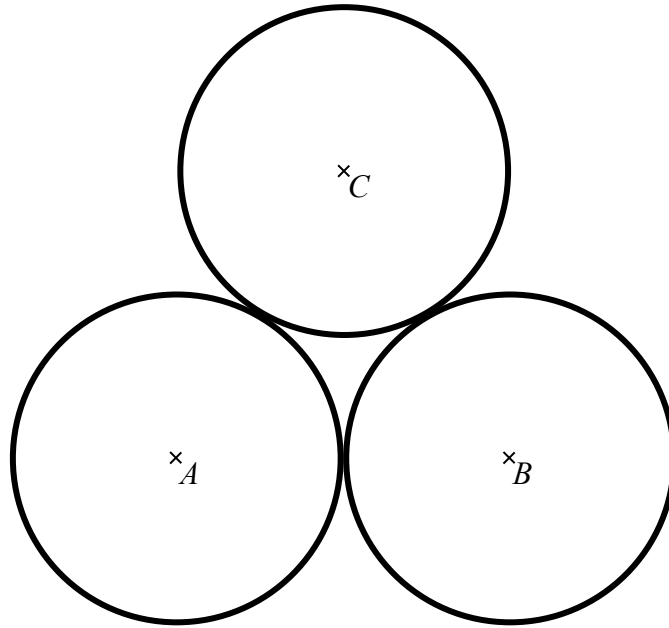


Figure 1

图一

2. Figure 2 shows a square $ABCD$ with side 1 unit. Construct a triangle APQ , in which P, Q lie on the line segments BC and CD respectively, and $\angle PAB = \angle QAD = 15^\circ$. Write down the type of triangle that APQ is.

图二所示为一个边长为 1 单位的正方形 $ABCD$ 。试作一个三角形 APQ ，其中 P 、 Q 分别位于线段 BC 、 CD 上且 $\angle PAB = \angle QAD = 15^\circ$ 。写出 APQ 是哪一类三角形。

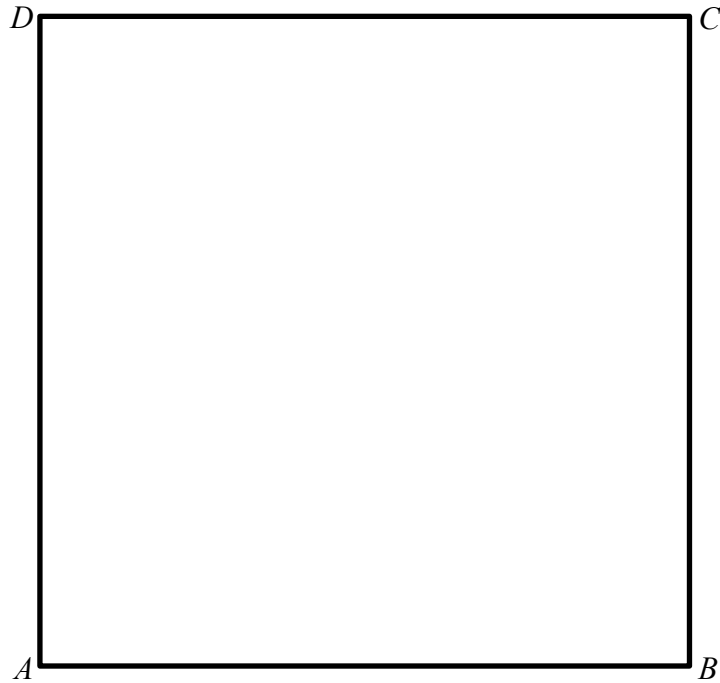


Figure 2

图二

3. Figure 3 shows a triangle ABC . Use A , B and C as centres to construct three circles respectively that are pairwise tangent to each other.

图三所示为一个三角形 ABC 。试以 A 、 B 及 C 为圆心分别构造三个圆，使得它们两两相切。

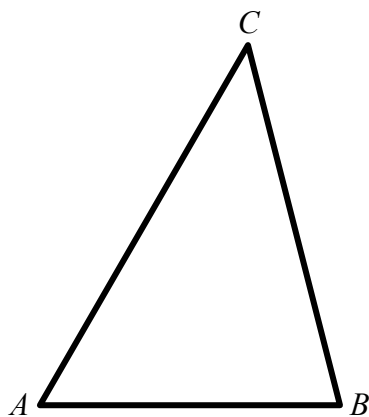


Figure 3

图三

END

完