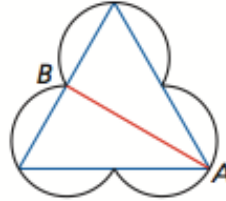


1) Consider the points $P(2, 0)$, $A(-4, 2)$, $B(0, -6)$, and $C(6, -3)$. First, show that P is on the bisector of $\angle ABC$. Second, write an equation of the line that contains the bisector of $\angle ABC$.

2) A trefoil (below) is created by constructing a circle at each vertex of an equilateral triangle. The radius of each circle equals the distance from each vertex to the circumcenter of the triangle. If the distance from one vertex to the circumcenter is 14 cm, what is the distance AB across the trefoil?



3) Find the centroid of a triangle with the vertices $A(0, -4)$, $B(14, 6)$, $C(16, -8)$.

4) The midpoints of the sides of a triangle are $A(-6, 3)$, $B(2, 1)$, $C(0, -3)$. Find the coordinates of the vertices of the triangle.

5) A bag contains five sticks. The lengths of the sticks are 1 inch, 3 inches, 5 inches, 7 inches, and 9 inches. Suppose you pick three sticks from the bag at random. What is the probability you can form a triangle with the three sticks?

6) Write and solve an inequality for the possible values of x .

