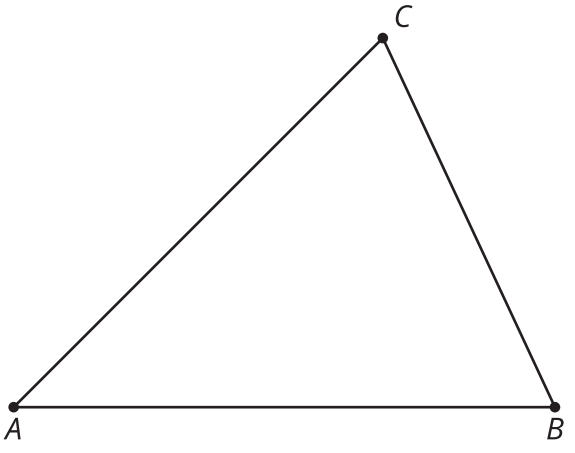
Unit 7 Lesson 5: Triangles in Circles

1 One Perpendicular Bisector (Warm up)

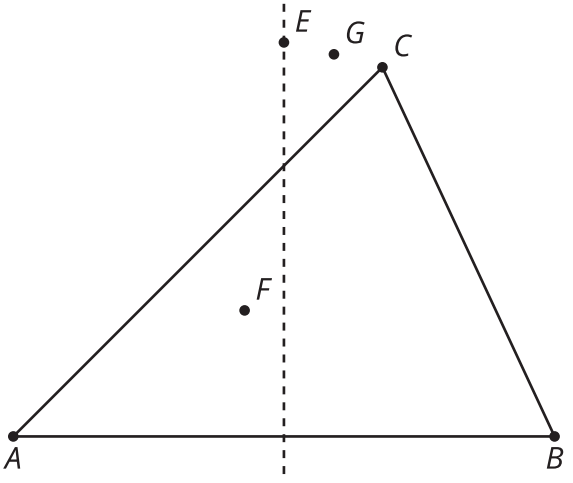
Student Task Statement

The image shows a triangle.



1. Construct the perpendicular bisector of segment AB.
2. Imagine a point D placed anywhere on the perpendicular bisector you constructed. How would the distance from D to A compare to the distance from D to B? Explain your reasoning.

Activity Synthesis

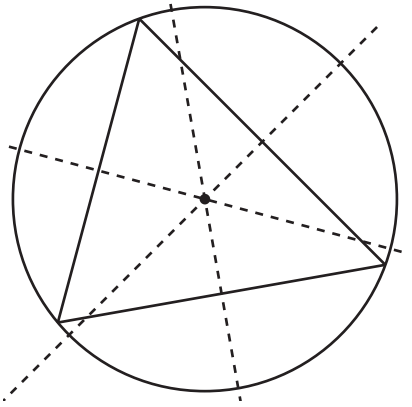


2 Three Perpendicular Bisectors

Student Task Statement

1. Construct the perpendicular bisector of segment BC from the earlier activity. Label the point where the 2 perpendicular bisectors intersect as P.
2. Use a colored pencil to draw segments PA, PB, and PC. How do the lengths of these segments compare? Explain your reasoning.
3. Imagine the perpendicular bisector of segment AC. Will it pass through point P? Explain your reasoning.
4. Construct the perpendicular bisector of segment AC.
5. Construct a circle centered at P with radius PA.
6. Why does the circle also pass through points B and C?

Activity Synthesis

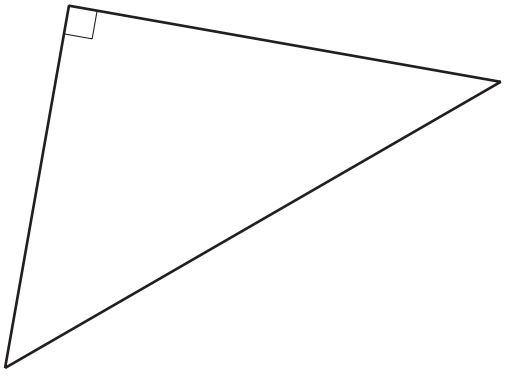


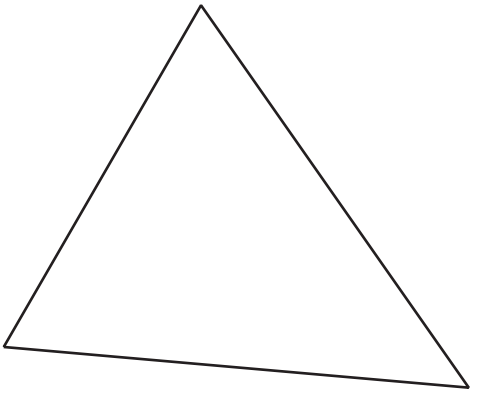
3 Wandering Centers

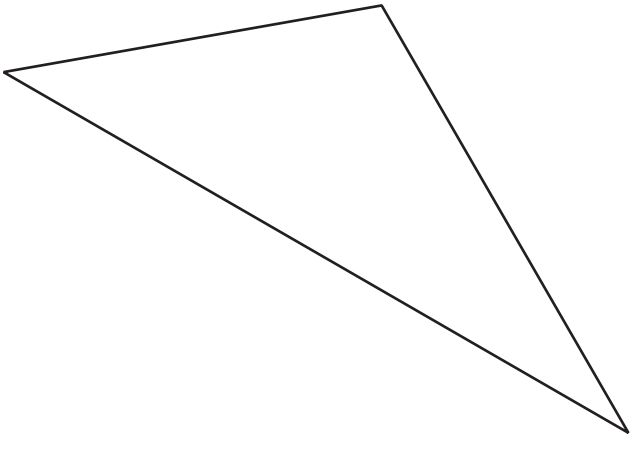
Student Task Statement

Each student in your group should choose 1 triangle. It's okay for 2 students to choose the same triangle as long as all 3 are chosen by at least 1 student.

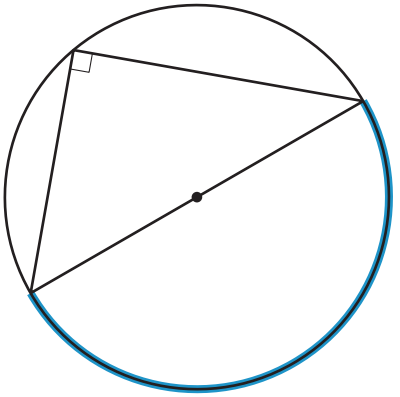
1. Construct the circumscribed circle of your triangle.
2. After you finish, compare your results. What do you notice about the location of the **circumcenter** in each triangle?

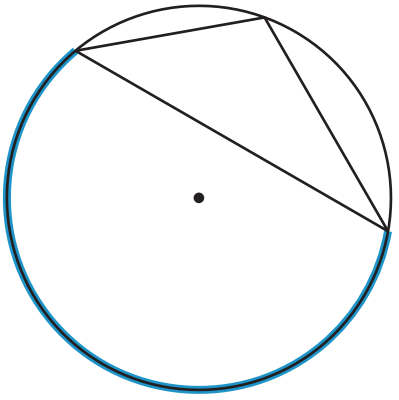


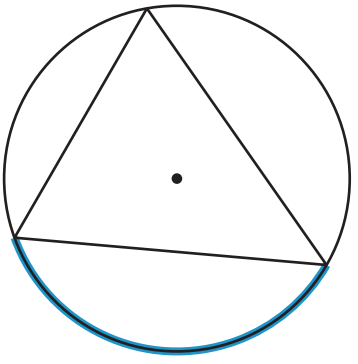




Activity Synthesis







Images for Activity Synthesis