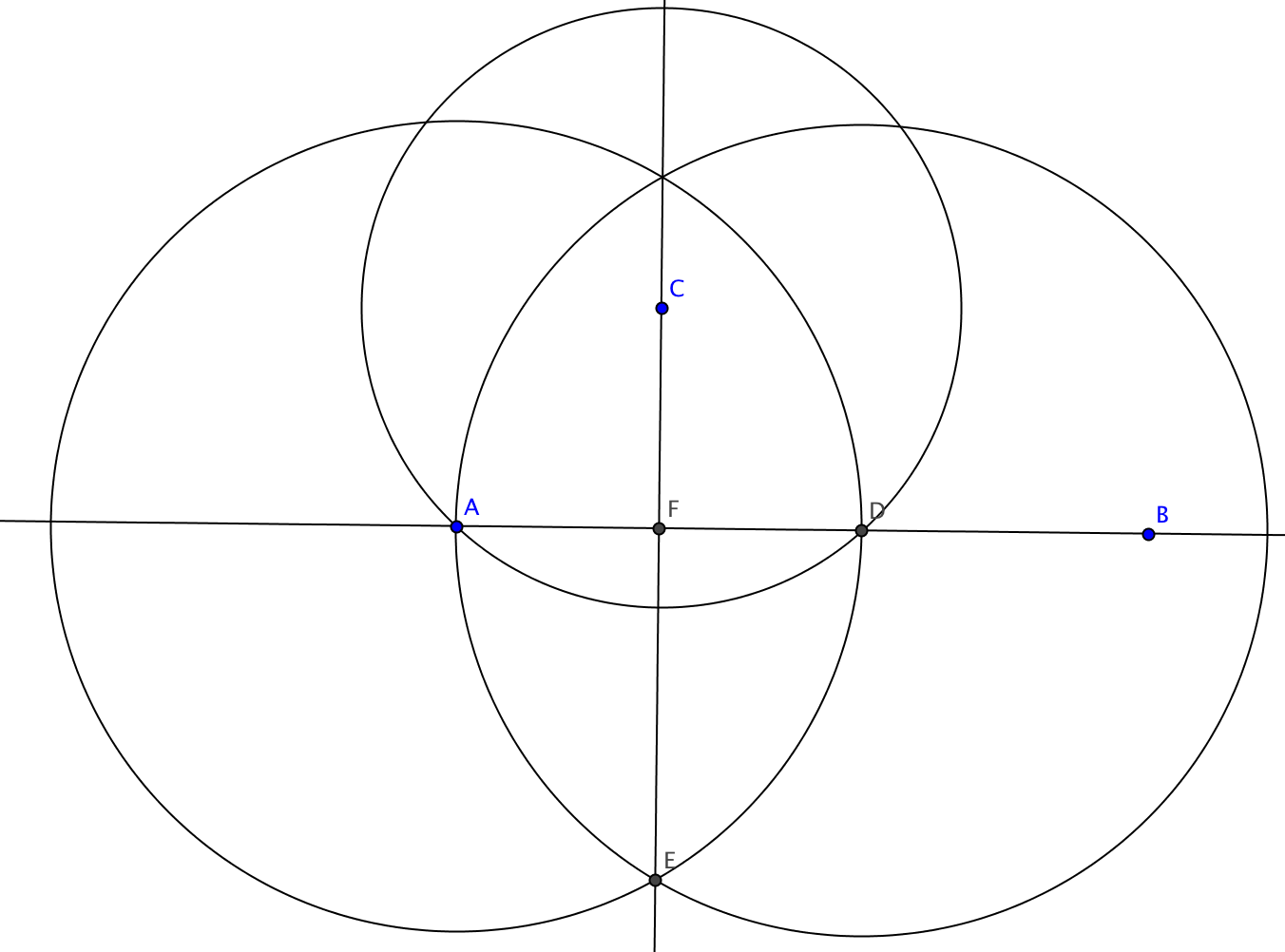
**Activity 2.7.4 Construction of a Perpendicular to a Line   
from a Point not on the Line**

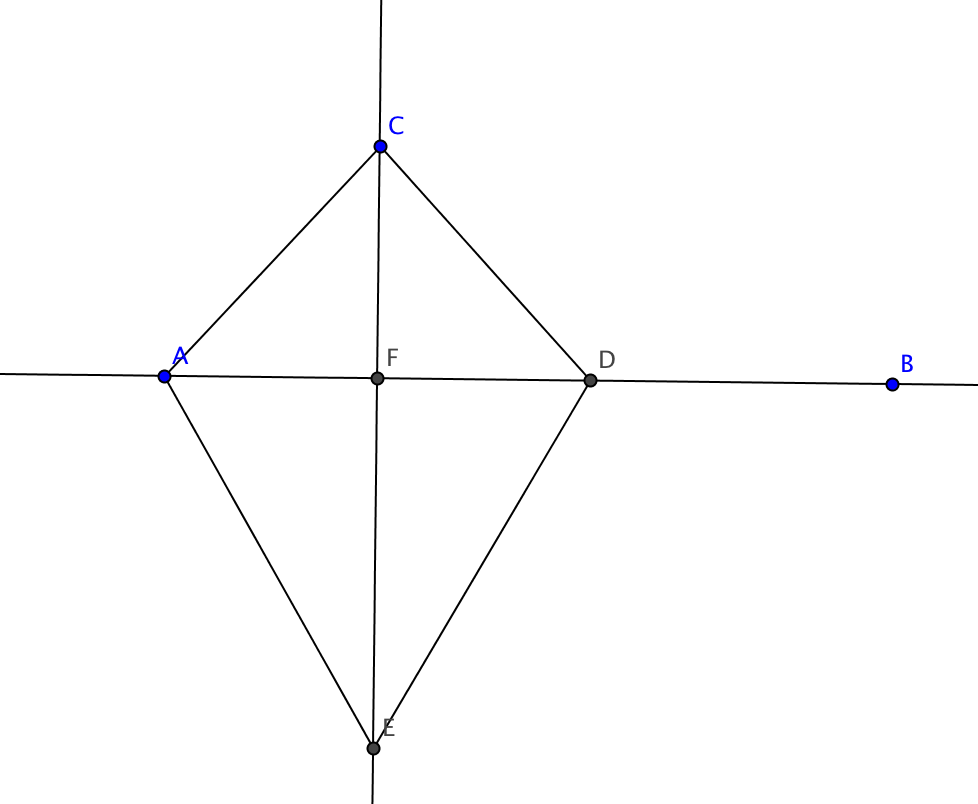
**Construction**

Given: with *C* a point not on

To construct: a line passing through C and perpendicular to



Steps in the construction:

1. Construct the circle with center *C* passing through *A.*
2. Label the other point where the circle intersects as point *D*.
3. Construct an equilateral triangle ∆*ADF* with side .
4. Draw the line through *C* and *E*.
5. ****Label point *F*, the intersection of and .

Claim: .

**Proof**

1. Construct segments , , , and .
2. Show that ∆*CAE* ∆*CDE.* (Write out the steps)

3. Explain why .

1. Show that ∆*CAF* ∆*CDF.* (Write out the steps)
2. because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Explain why .