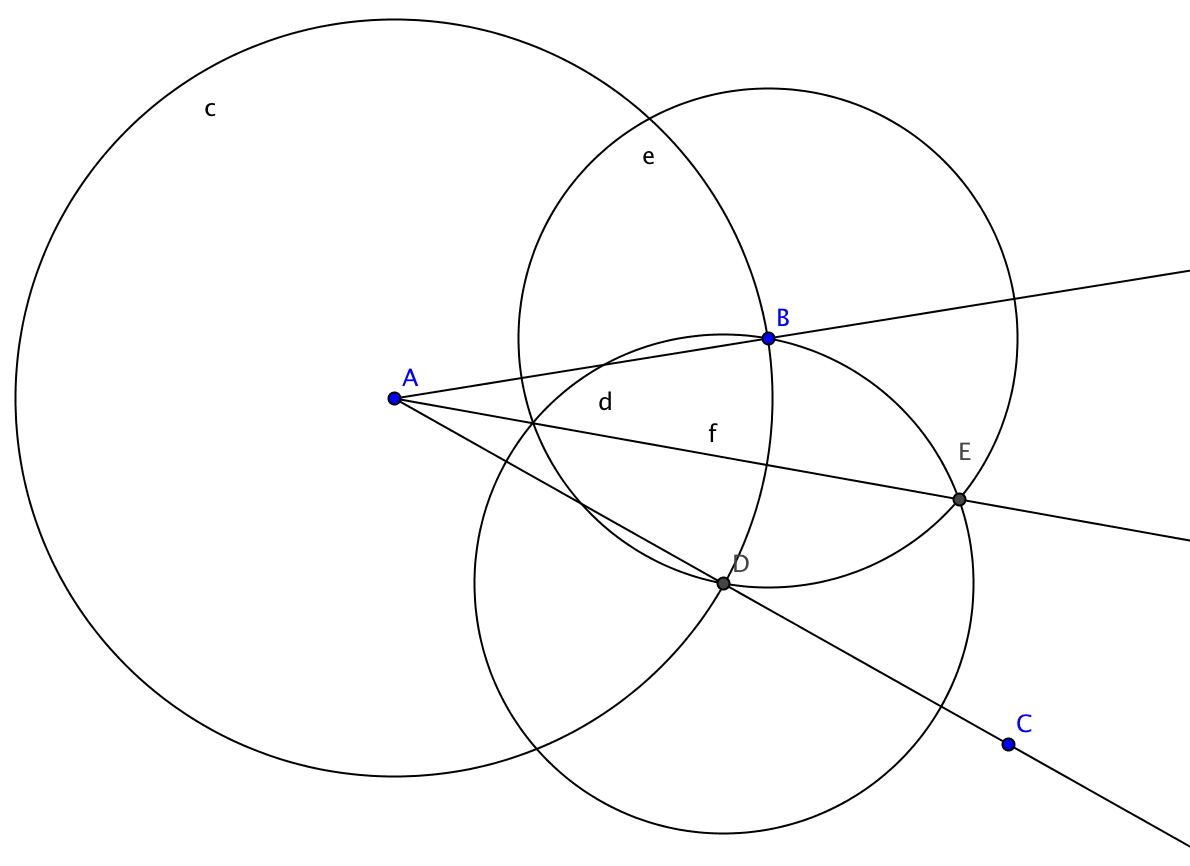
**Activity 2.7.2 Construction of an Angle Bisector**

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**Construction**

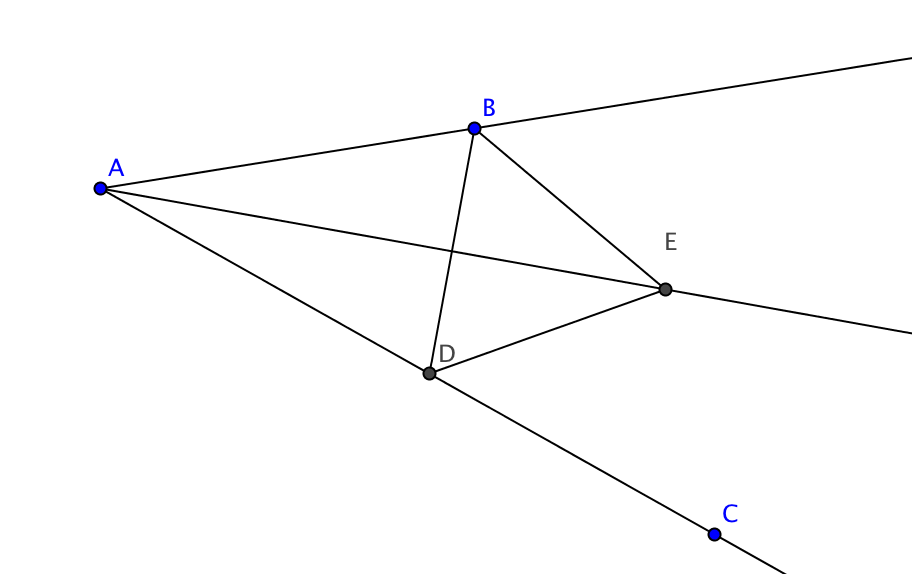
Given:

To construct: the ray from *A* that bisects

Steps in the construction:

1. Construct the circle with center *A* passing through *B*.
2. Label the point where the circle and ray intersect at point *D.*
3. Construct the circle with center *D* passing through *B*.
4. Construct the circle with center *B* passing through *C*.
5. Label point *E* as one of the points where these last two circles intersect.

Claim: Ray bisects



**Proof**

1. Construct segments , and .
2. As in the proof for the equilateral triangle construction, *BE* = *DE.* Explain why.
3. *AB = AD* because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. *AE = AE* because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Now we can show that ∆ \_\_\_\_\_\_ ∆ \_\_\_\_\_\_ by the \_\_\_\_\_\_ Congruence Theorem.
6. because corresponding \_\_\_\_\_\_\_\_\_\_\_\_ of congruent triangles are \_\_\_\_\_\_\_\_\_\_\_\_\_
7. because it divides into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.