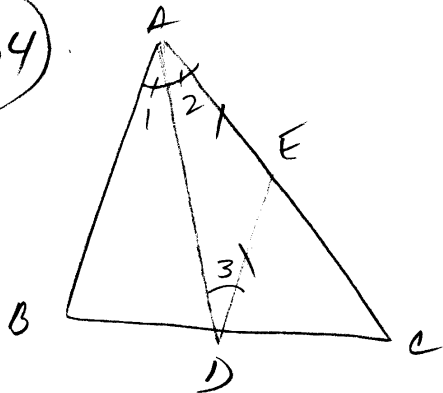


Homework #6

SECTION 5.2

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Given: $\triangle ABC$
 \overline{AD} bisects $\angle BAC$
 $\overline{AE} \cong \overline{ED}$

Prove $\frac{AE}{AC} = \frac{BD}{BC}$

Proof

1. $\triangle ABC$
2. \overline{AD} bisects $\angle BAC$
3. $\angle 1 \cong \angle 2$
4. $\overline{AE} \cong \overline{ED}$
5. $\angle 2 \cong \angle 3$
6. $\angle 1 \cong \angle 3$
7. (3,5) $\overline{AB} \parallel \overline{ED}$
8. $\frac{AE}{AC} = \frac{BD}{BC}$

1. given
2. given
3. def. of bisector
4. given
5. $\triangle AED$, \angle 's opp. \cong sides $\cong \cong$
6. transitive law \cong
7. \parallel iff alt. int. \angle 's \cong
 (\overline{AB} and \overline{DE} with transversal \overline{AD})
8. $\triangle CAB$, $\overline{DE} \parallel \overline{AB}$