

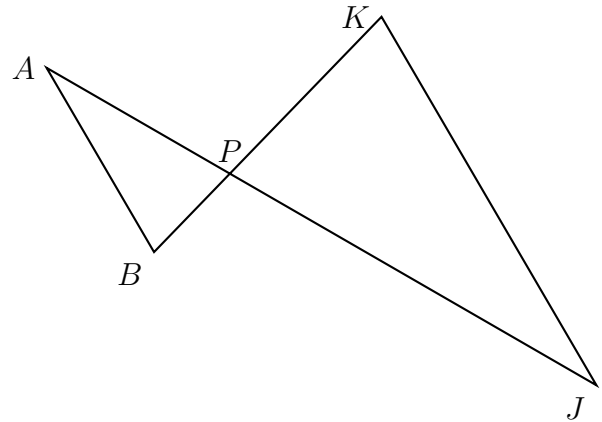
6 January 2020

7.3 Homework: Angle-angle theorem of similar triangles

1. Two triangles are shown with P the intersection of \overline{AJ} and \overline{BK} .

(a) Justify $\angle APB \cong \angle JPK$.

(b) What angle must be congruent to $\angle B$ to prove $\triangle ABP \sim \triangle JKP$ by *angle-angle similarity*?

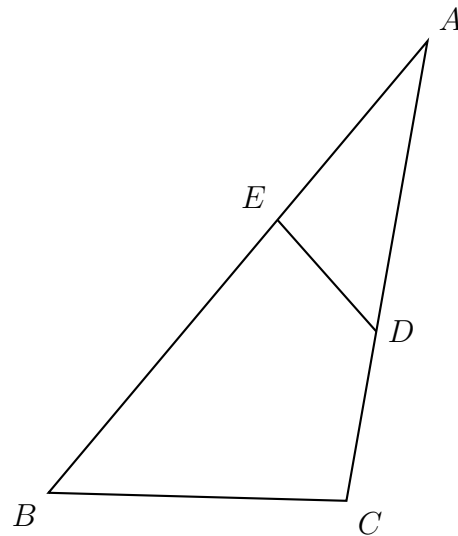


2. Given $\triangle PQR \sim \triangle STU$, $m\angle P = 37^\circ$, and $m\angle T = 46^\circ$. Find $m\angle Q$.

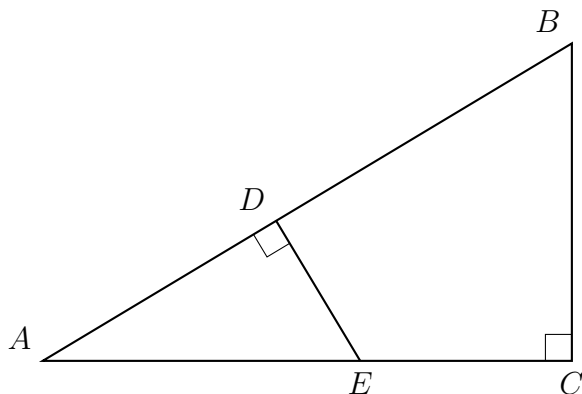
3. The diagram below shows $\triangle ABC$, with \overline{AEB} and \overline{ADC} .

(a) Justify $\angle BAC \cong \angle DAE$.

(b) What angle must be congruent to $\angle AED$ to prove $\triangle ABC \sim \triangle ADE$ by *angle-angle similarity*?



4. In $\triangle ABC$ shown below, $\angle ACB$ is a right angle, E is a point on \overline{AC} , and \overline{ED} is drawn perpendicular to hypotenuse \overline{AB} .

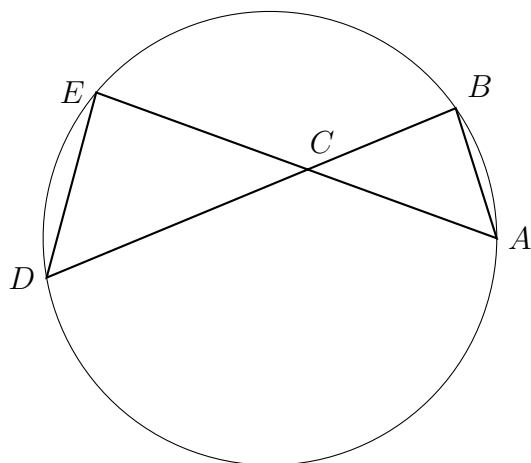


If $AB = 9$, $BC = 6$, and $DE = 4$, what is the length of \overline{AE} ?

5. In the diagram below, the chords \overline{AE} and \overline{BD} intersect at C . Given $AC = 6$, $BC = 4$, and $EC = 7$.

(a) What angle corresponds with $\angle D$?

(b) Complete the similarity statement:
 $\triangle ABC \sim$



(c) Determine the length of \overline{CD} .