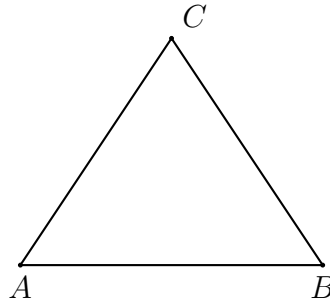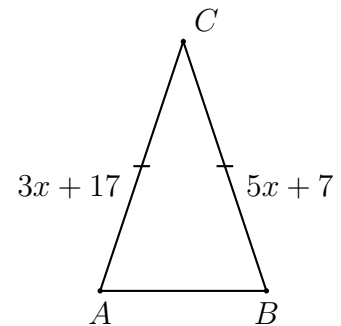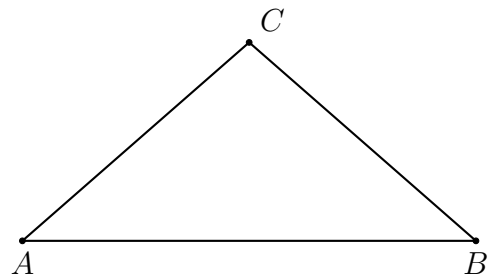**4.9 Homework: Isosceles triangles**

1. Given isosceles $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$. On the diagram mark the congruent line segments with tick marks.
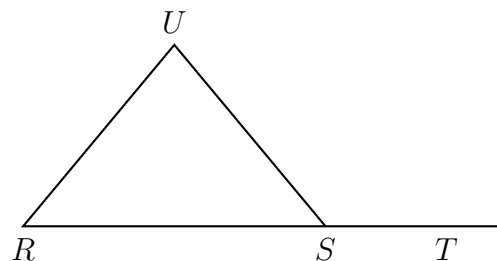

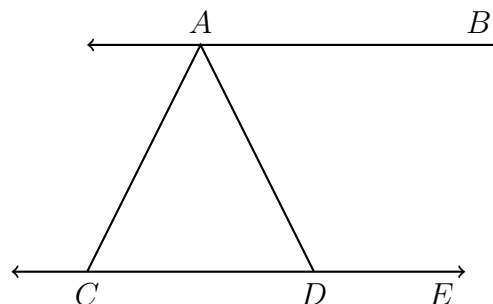2. Given $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$. $AC = 5x + 7$ and $BC = 3x + 17$. Find AC.

3. Given isosceles $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$, $m\angle A = 12x$, and $m\angle B = 42$. Find x. Find $m\angle C$.

4. Given isosceles $\triangle RSU$ with $\overline{UR} \cong \overline{US}$. If $m\angle UST = 130$ find $m\angle U$.

5. Given parallel lines $\overleftrightarrow{AB} \parallel \overleftrightarrow{CDE}$ with $\overline{AC} \cong \overline{AD}$. If $m\angle BAD = 70$ find $m\angle ACD$.

6. Given $\overrightarrow{BA} \perp \overrightarrow{BC}$, $m\angle ABD = 4x$, and $m\angle DBC = 2x - 12$. Find $m\angle DBC$.

   For full credit, show the check using both angle measures.