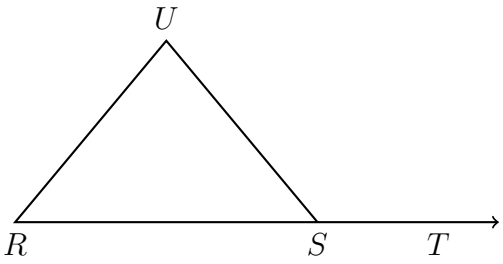
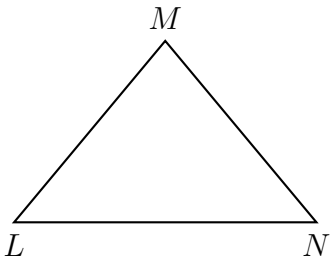
3.6 External angles of triangles

1. The measures in degrees of the three angles of a triangle are x, $\frac{1}{2}x$, and $\frac{3}{2}x$. Find the measures of the triangle's angles.

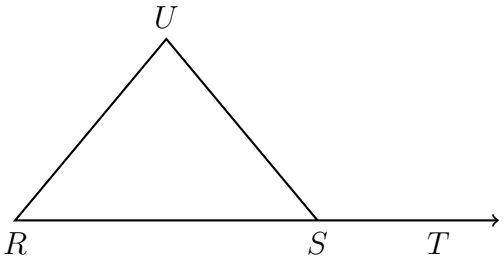
2. Given $\triangle RSU$. If $m\angle UST = x$ and $m\angle R = x - 80$, and $m\angle U = x - 50$.



3. Given isosceles $\triangle LMN$ with $\overline{LM} \cong \overline{NM}$. If $m\angle L = 2x + 20$ and $m\angle N = 3x + 5$, find $m\angle M$.

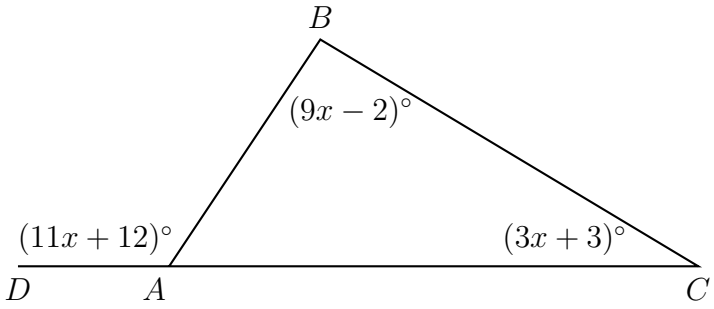


4. Given $\triangle RSU$. If $m\angle UST = x + 50$, $m\angle R = x - 20$, and $m\angle U = x + 10$, find $m\angle R$.

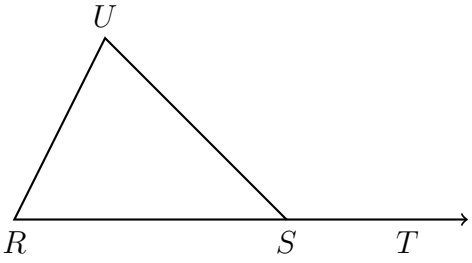


5. In $\triangle ABC$ shown below, side $\overline{AC}$ is extended to point D with $m\angle DAB = (11x + 12)°$, $m\angle C = (3x + 3)°$, and $m\angle B = (9x + 2)°$.

   Find $m\angle BAC$.

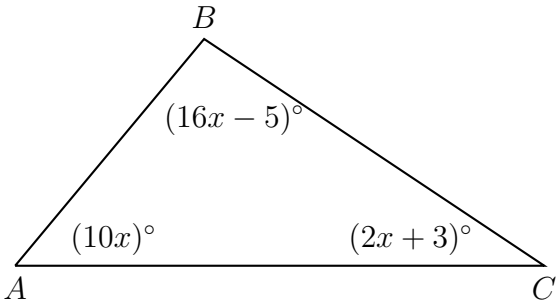


6. Given isosceles $\triangle RSU$ with $\overline{US} \cong \overline{RS}$. If $m\angle UST = 150$ find $m\angle U$.



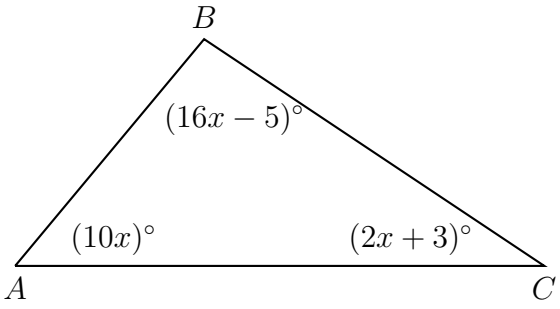
7. In $\triangle ABC$ shown below, $m\angle A = (10x)°$, $m\angle B = (16x - 5)°$, and $m\angle C = (2x + 3)°$.

   Find $m\angle A$. (show the check for full credit)



8. In $\triangle ABC$ shown below, $m\angle A = (10x)°$, $m\angle B = (16x - 5)°$, and $m\angle C = (2x + 3)°$.

   Find $m\angle A$. (show the check for full credit)



9. In $\triangle ABC$ shown below, side $\overline{AC}$ is extended to point D with $m\angle DAB = (6x - 16)°$, $m\angle C = (x + 4)°$, and $m\angle B = (4x + 3)°$.

   Find $m\angle BAC$.