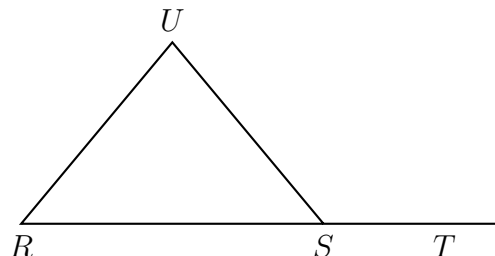


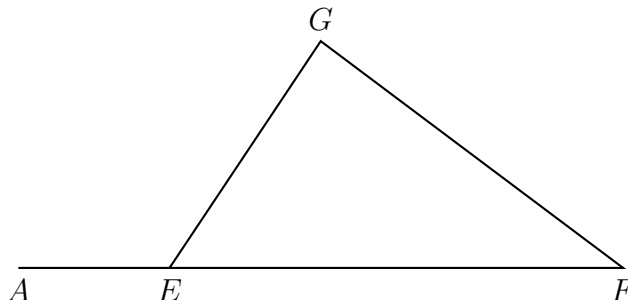
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3.5 Homework: External angles of triangles

1. Given $\triangle RSU$. If $m\angle UST = 155^\circ$ and $m\angle R = 60^\circ$, find $m\angle U$.

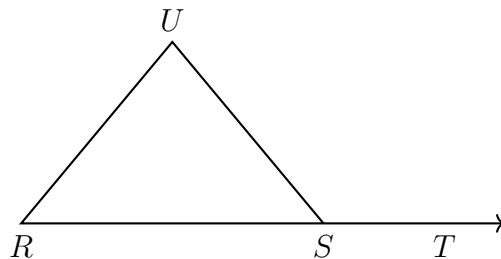


2. Given $\triangle EFG$ with \overline{EF} extended to A . If $m\angle F = 44^\circ$ and $m\angle G = 92^\circ$, find $m\angle AEG$.

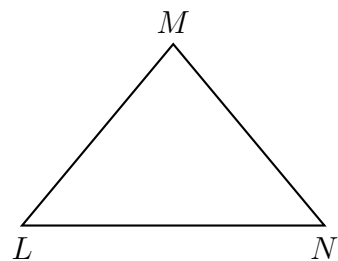


3. The measures in degrees of the three angles of a triangle are x , $\frac{1}{2}x$, and $\frac{3}{2}x$. Find the measures of the triangle's angles.

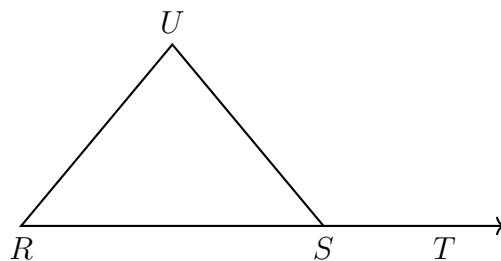
4. Given $\triangle RSU$. If $m\angle UST = x$ and $m\angle R = x - 80$, and $m\angle U = x - 50$.



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



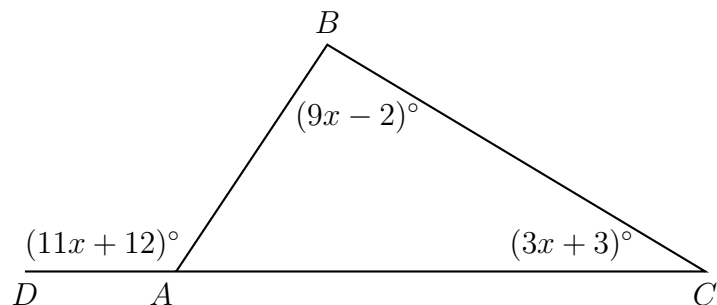
6. Given $\triangle RSU$. If $m\angle UST = x + 50$, $m\angle R = x - 20$, and $m\angle U = x + 10$, find $m\angle R$.



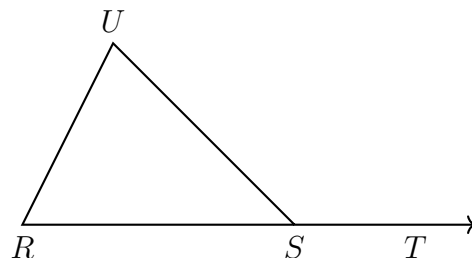
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7. In $\triangle ABC$ shown below, side \overline{AC} is extended to point D with $m\angle DAB = (11x + 12)^\circ$, $m\angle C = (3x + 3)^\circ$, and $m\angle B = (9x + 2)^\circ$.

Find $m\angle BAC$.

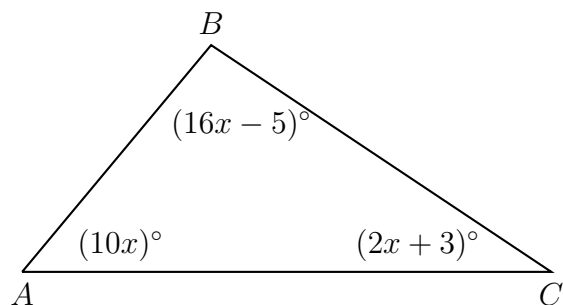


8. Given isosceles $\triangle RSU$ with $\overline{US} \cong \overline{RS}$. If $m\angle UST = 150$ find $m\angle U$.



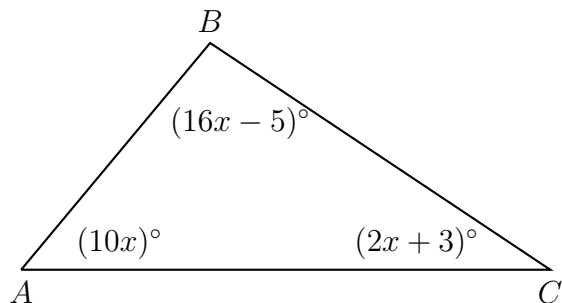
9. In $\triangle ABC$ shown below, $m\angle A = (10x)^\circ$, $m\angle B = (16x - 5)^\circ$, and $m\angle C = (2x + 3)^\circ$.

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



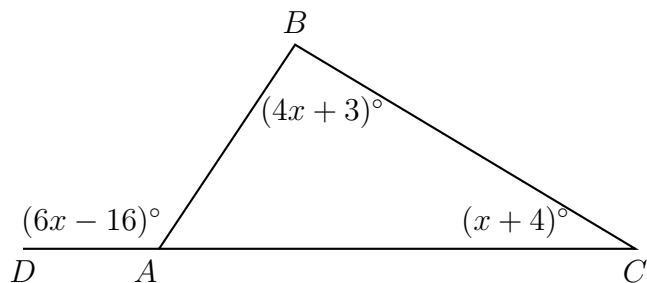
10. In $\triangle ABC$ shown below, $m\angle A = (10x)^\circ$, $m\angle B = (16x - 5)^\circ$, and $m\angle C = (2x + 3)^\circ$.

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



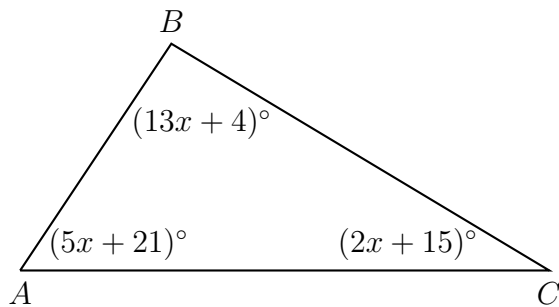
11. In $\triangle ABC$ shown below, side \overline{AC} is extended to point D with $m\angle DAB = (6x - 16)^\circ$, $m\angle C = (x + 4)^\circ$, and $m\angle B = (4x + 3)^\circ$.

Find $m\angle BAC$.



12. In $\triangle ABC$ shown below, $m\angle A = (5x + 21)^\circ$, $m\angle B = (13x + 4)^\circ$, and $m\angle C = (2x + 15)^\circ$.

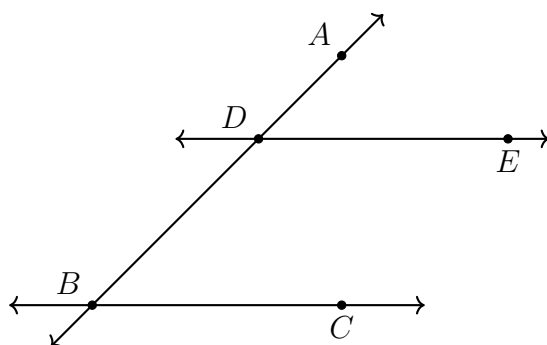
What is $m\angle A$?



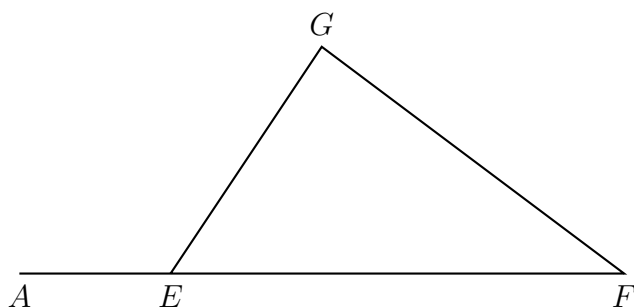
13. Given two parallel lines that intersect a transversal, $\overleftrightarrow{DE} \parallel \overleftrightarrow{BC}$. $m\angle ABC = 3x - 5$ and $m\angle BDE = 6x + 5$.

Find $m\angle ADE$.

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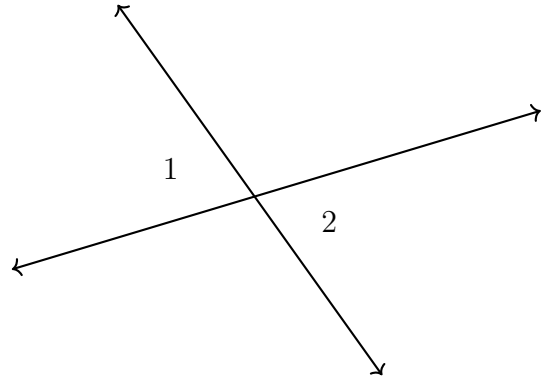
14. Given $\triangle EFG$ with \overline{EF} extended to A . If $m\angle F = 38^\circ$ and $m\angle AEG = 133^\circ$, what is $m\angle EGF$?



15. Given two vertical angles as shown, $m\angle 1 = 5x + 5$, $m\angle 2 = 7x - 17$.

Find $m\angle 1$.

For full credit find the $m\angle 2$ as a check.



16. Given $\overrightarrow{BA} \perp \overrightarrow{BC}$, $m\angle ABD = 5x + 47$, and $m\angle DBC = 2x + 22$. Find $m\angle DBC$.

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

