Warm Up - Find the measure of each angle and provide justification.


Homework

1. Corr
2. Corr
3. Alt Int
4. Alt Ext
5. Consec Int
6. Alt Ext
7. Alt Int 9. Consec Int
8. Alt Ext 10. Corr 12.84
$\begin{array}{llllll}11.110 & 13.80 & 15.125 & 14.111 & 16.47 & 18.113\end{array}$
$\begin{array}{lll}17.53 & 19.4 & 21.8\end{array}$
9. $7 \quad$ 22. 7
24.5
10. 9
11. -6
27.60
12. $4 \quad$ 28. -9

Notes Today: Remote Exterior Angle and Triangle Sum Theorem
What do all the angles of a triangle add up to?

The triangle sum theorem states the three angles of a triangle sum to $180^{\circ}$.
angle

Notes Today: Remote Exterior Angle and Triangle Sum Theorem
The Remote Exterior Angle Theorem is slightly harder (but not by much).
Consider the picture below. What is the measure of angle $x$ ?


Notes Today: Remote Exterior Angle and Triangle Sum Theorem
It may be more helpful to solve for the measure of angle $y$ first. Use the triangle sum theorem to solve for $m<y$.


Notes Today: Remote Exterior Angle and Triangle Sum Theorem
Now that we know $m<y$, we can use the linear pair postulate (from day 1) to solve for $m<x$.


Notes Today: Remote Exterior Angle and Triangle Sum Theorem
Notice: $87+41+m<y=180^{\circ}$ by the triangle sum theorem.
Also, $m<y+m<x=180^{\circ}$ by the linear pair postulate.
What can we conclude?


Notes Today: Remote Exterior Angle and Triangle Sum Theorem Remote Exterior Angle Theorem - The sum of the measures of two angles of a triangle is equal to the measure of the remote exterior angle.

The key word is remote. The exterior angle (outside the triangle) must be away from the two angles it sums to. It cannot be next to one of them. Remote means far from.



## Practice!

$\mathrm{m} \angle \mathrm{T}=35^{\circ}, \mathrm{m} \angle \mathrm{H}=61^{\circ}$. Find $\mathrm{m} \angle \mathrm{MAT}$ M


Practice!


Practice!


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