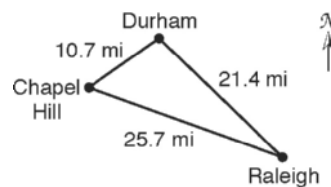


LESSON
4-2

Practice B
Angle Relationships in Triangles

1. An area in central North Carolina is known as the Research Triangle because of the relatively large number of high-tech companies and research universities located there. Duke University, the University of North Carolina at Chapel Hill, and North Carolina State University are all within this area. The Research Triangle is roughly bounded by the cities of Chapel Hill, Durham, and Raleigh. From Chapel Hill, the angle between Durham and Raleigh measures 54.8° . From Raleigh, the angle between Chapel Hill and Durham measures 24.1° . Find the angle between Chapel Hill and Raleigh from Durham.

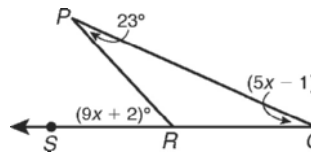
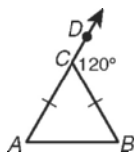


2. The acute angles of right triangle ABC are congruent. Find their measures.

The measure of one of the acute angles in a right triangle is given. Find the measure of the other acute angle.

3. 44.9° _____ 4. $(90 - z)^\circ$ _____ 5. 0.3° _____

Find each angle measure.

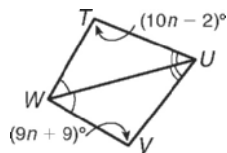
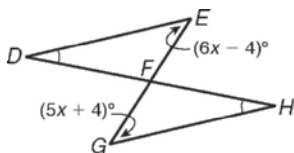


6. $m\angle B$ _____ 7. $m\angle PRS$ _____

8. In $\triangle LMN$, the measure of an exterior angle at N measures 99° .

$m\angle L = \frac{1}{3}x^\circ$ and $m\angle M = \frac{2}{3}x^\circ$. Find $m\angle L$, $m\angle M$, and $m\angle LNM$. _____

9. $m\angle E$ and $m\angle G$ _____ 10. $m\angle T$ and $m\angle V$ _____



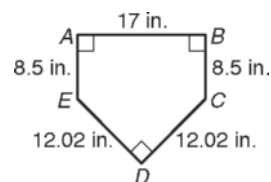
11. In $\triangle ABC$ and $\triangle DEF$, $m\angle A = m\angle D$ and $m\angle B = m\angle E$. Find $m\angle F$ if an exterior angle at A measures 107° , $m\angle B = (5x + 2)^\circ$, and $m\angle C = (5x + 5)^\circ$. _____

12. The angle measures of a triangle are in the ratio $3 : 4 : 3$. Find the angle measures of the triangle. _____

LESSON
4-3

Practice B
Congruent Triangles

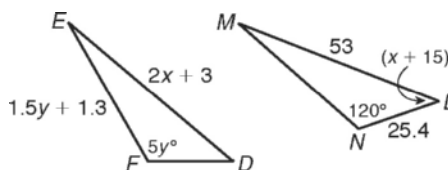
In baseball, home plate is a pentagon. Pentagon $ABCDE$ is a diagram of a regulation home plate. The baseball rules are very specific about the exact dimensions of this pentagon so that every home plate is congruent to every other home plate. If pentagon $PQRST$ is another home plate, identify each congruent corresponding part.



1. $\angle S \cong$ _____
2. $\angle B \cong$ _____
3. $\overline{EA} \cong$ _____
4. $\angle E \cong$ _____
5. $\overline{PQ} \cong$ _____
6. $\overline{TS} \cong$ _____

Given: $\triangle DEF \cong \triangle LMN$. Find each value.

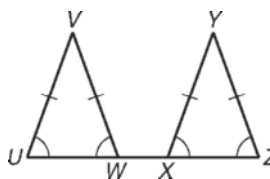
7. $m\angle L =$ _____
8. $EF =$ _____
9. Write a two-column proof.



Given: $\angle U \cong \angle UWV \cong \angle ZXY \cong \angle Z$,
 $\overline{UV} \cong \overline{WV}$, $\overline{XY} \cong \overline{ZY}$, $\overline{UX} \cong \overline{WZ}$

Prove: $\triangle UVW \cong \triangle XYZ$

Proof:



10. **Given:** $\triangle CDE \cong \triangle HIJ$, $DE = 9x$, and $IJ = 7x + 3$. Find x and DE .
- _____

11. **Given:** $\triangle CDE \cong \triangle HIJ$, $m\angle D = (5y + 1)^\circ$, and $m\angle I = (6y - 25)^\circ$. Find y and $m\angle D$.
- _____