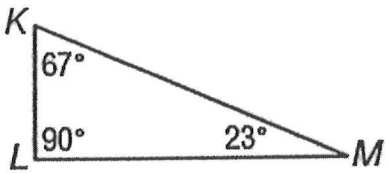
Name Key Date _____

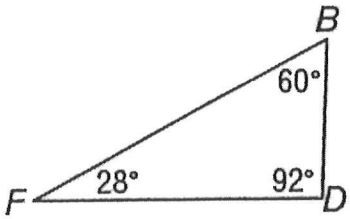
Chapter 4 Review

Section 4.1

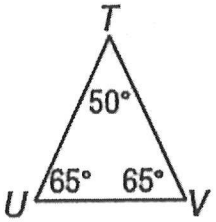
Classify the triangle by its angles.

1. 

RIGHT

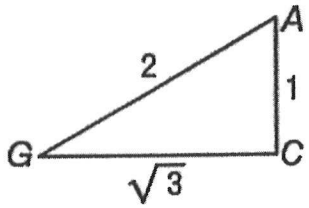
2. 

OBTUSE

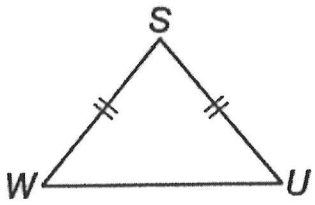
3. 

ACUTE

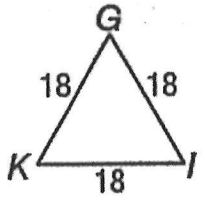
Classify the triangle by its sides.

4. 

scalene

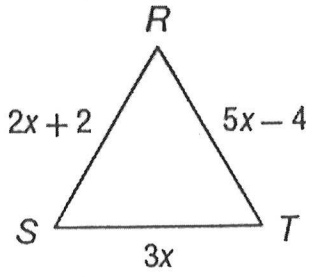
5. 

Isosceles

6. 

EQUILATERAL

7. Find the value of x and each side if the triangle is equilateral.



$2x+2 = 5x-4$

$6 = 3x$

$2 = x$

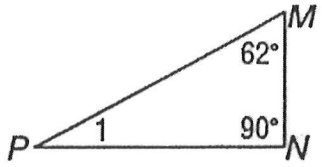
$RS = 6$

$ST = 6$

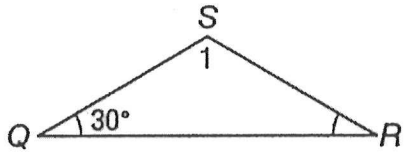
$RT = 6$

Section 4.2

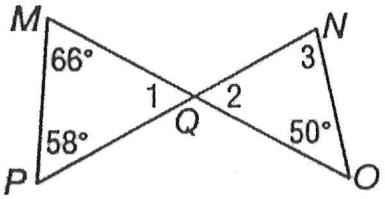
Find the measure of the missing angles.

1. 

$\angle 1 = 28°$

2. 

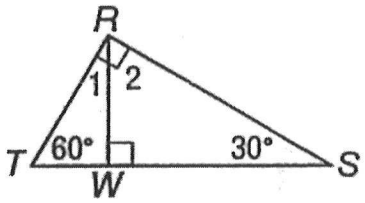
$\angle 1 = 120°$

3. 

$\angle 1 = 56°$

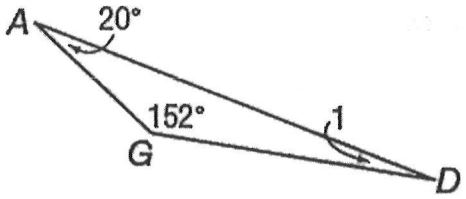
$\angle 2 = 56°$

$\angle 3 = 74°$

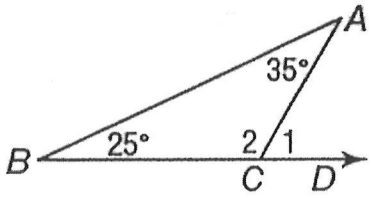
4. 

$\angle 1 = 30°$

$\angle 2 = 60°$

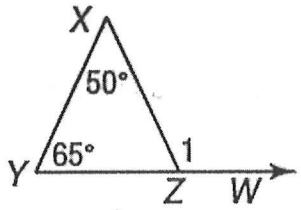
5. 

$\angle 1 = 8°$

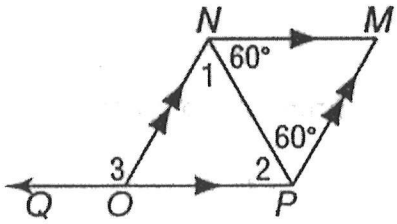
6. 

$\angle 1 = 60°$

$\angle 2 = 120°$

7. 

$\angle 1 = 115°$

8. 

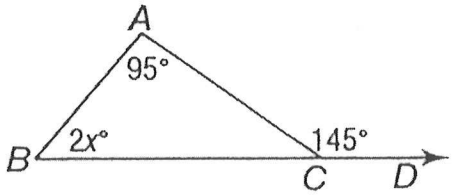
$\angle 1 = 60°$

$\angle 2 = 60°$

$\angle 3 = 120°$

Find each measure.

9. $m\angle ABC$



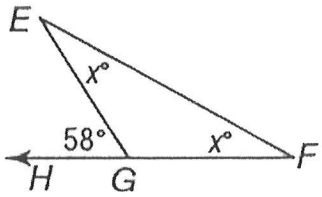
$2x + 95 = 145$

$2x = 50$

$x = 25$

$\angle ABC = 50°$

10. $m\angle F$



$x + x = 58$

$2x = 58$

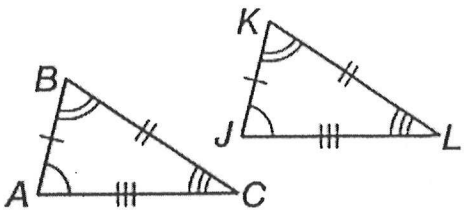
$x = 29$

$m\angle F = 29°$

Section 4.3

Show that the polygons are congruent by identifying all congruent corresponding parts. Then write a congruence statement.

1.



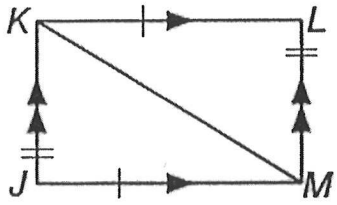
$\angle A \cong \angle J$ $\quad AB \cong JK$

$\angle B \cong \angle K$ $\quad BC \cong KL$

$\angle C \cong \angle L$ $\quad CA \cong LJ$

$\triangle ABC \cong \triangle JKL$

2.



$\angle J \cong \angle L$ $\quad JK \cong LM$

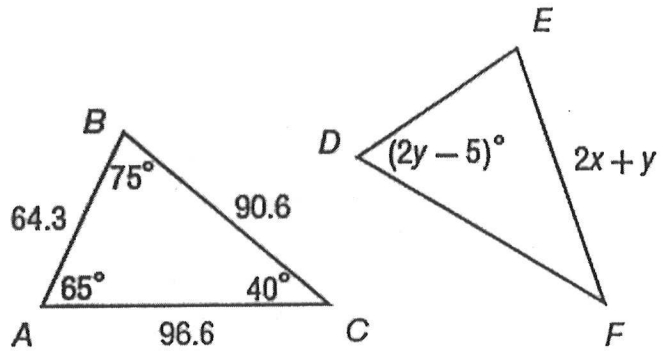
$\angle JKM \cong \angle LMK$ $\quad KM \cong MK$

$\angle KMJ \cong \angle MKL$ $\quad MJ \cong KL$

$\triangle JKM \cong \triangle LMK$

Find the values of the variables.

3.



$2y - 5 = 65$

$2y = 70$

$y = 35$

$2x + y = 90.6$

$2x + 35 = 90.6$

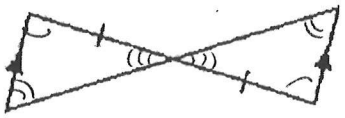
$2x = 55.6$

$x = 27.8$

Sections 4.4 – 4.5

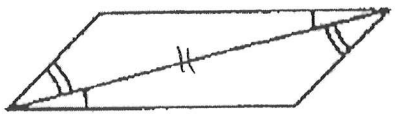
State the method – SSS, SAS, ASA, AAS or HL – in which the triangles can be proved congruent.

1.



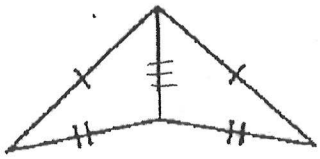
ASA, AAS

2.



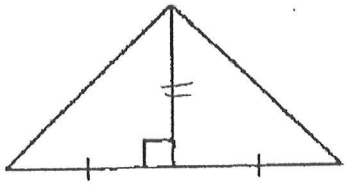
ASA

3.



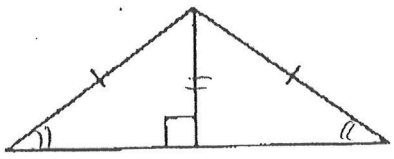
SSS

4.



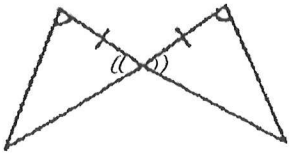
SAS

5.



HL, AAS

6.

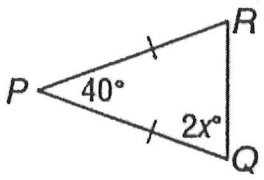


ASA

Section 4.6

Find the value of each variable.

1.

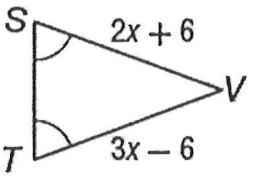


$2x + 2x + 40 = 180$

$4x = 140$

$x = 35$

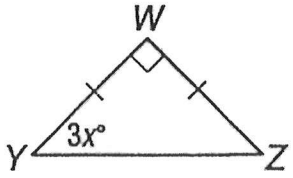
2.



$2x + 6 = 3x - 6$

$12 = x$

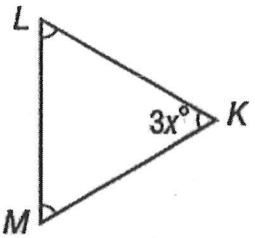
3.



$3x = 45$

$x = 15$

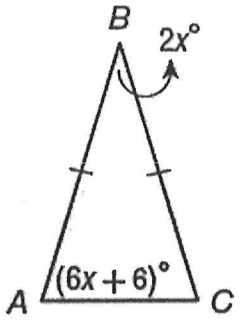
4.



$3x = 60$

$x = 20$

5.



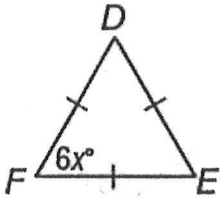
$6x + 6 + 6x + 6 + 2x = 180$

$14x + 12 = 180$

$14x = 168$

$x = 12$

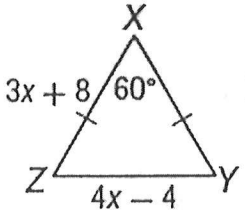
6.



$6x = 60$

$x = 10$

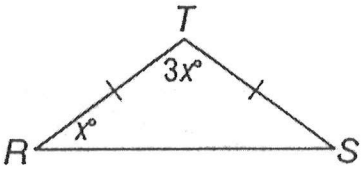
7.



$3x + 8 = 4x - 4$

$12 = x$

8.

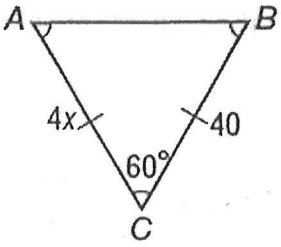


$3x + x + x = 180$

$5x = 180$

$x = 36$

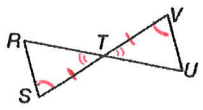
9.



$4x = 40$

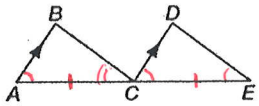
$x = 10$

1. **Given:** $\angle S \cong \angle V$,
T is the midpoint *of* $\overline{SV}$
Prove: $\triangle RTS \cong \triangle UTV$



S	R
① $\angle S \cong \angle V$ T is midpt of $\overline{SV}$.	① Given
② $ST \cong VT$	② def of midpt.
③ $\angle RTS \cong \angle UTV$	③ vert $\angle$s $\cong$.
④ $\triangle RTS \cong \triangle UTV$	④ ASA

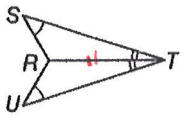
2.



Given: $\overline{CD}$ bisects $\overline{AE}$, $\overline{AB} \parallel \overline{CD}$
$\angle E \cong \angle BCA$
Prove: $\triangle ABC \cong \triangle CDE$

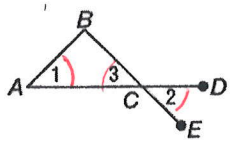
S	R
① CD bisects AE	① Given.
② $AC \cong CE$	② def of seg. bisector
③ $AB \parallel CD$	③ $\angle$s Given
④ $\angle A \cong \angle DCE$	④ Corr $\angle$s $\cong$.
⑤ $\angle E \cong \angle BCA$	⑤ Given
⑥ $\triangle ABC \cong \triangle CDE$	⑥ ASA

3. **Given:** $\angle S \cong \angle U$; $\overline{TR}$ bisects $\angle STU$.
Prove: $\angle SRT \cong \angle URT$



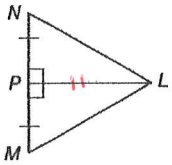
S	R
① $\angle S \cong \angle U$ TR bisects $\angle STU$	① Given.
② $RT \cong RT$	② Reflex.
③ $\triangle STR \cong \triangle UTR$	③ AAS
④ $\angle SRT \cong \angle URT$	④ CPCTC

4. **Given:** $\angle 1 \cong \angle 2$
Prove: $\overline{AB} \cong \overline{CB}$



S	R
① $\angle 1 \cong \angle 2$	① Given
② $\angle 2 \cong \angle 3$	② Vert $\angle$s $\cong$
③ $\angle 1 \cong \angle 3$	③ Transitive
④ $AB \cong CB$	④ if ☆, then △

5. Write a two column proof.
Given: $NP = PM$, $\overline{NP} \perp \overline{PL}$
Prove: $\triangle NPL \cong \triangle MPL$



S	R
① $NP = PM$ $NP \perp PL$	① Given
② $\angle LPN \cong \angle LPM = 90$	② def of $\perp$
③ $PL = PL$	③ Reflex.
④ $\triangle NPL \cong \triangle MPL$	④ SAS