

1. S A N S A N N S S A
 2. a. $x = 62, y = 152, z = 28$ b. $x = 68, y = 40, z = 72$ c. $x = 29, y = 61, z = 61$
 3.

Number of sides	Number of diagonals	Measure of each interior angle	Measure of each exterior angle
30	405	168°	12°
40	740	171°	9°
10	35	144°	36°
9	27	140°	40°

4. a. reflection b. slide c. rotation
 5. a. regular hexagon, isosceles trapezoid, xox b. regular hexagon, parallelogram, xox
 6.

Statements	Reasons
1. \overline{AB} with $\overline{AC} \cong \overline{BC} \cong \overline{AD} \cong \overline{BD}$ (by construction)	1. Given
2. $\overline{CD} \cong \overline{CD}$	2. Identity or Reflexive Property of \cong
3. $\triangle ACD \cong \triangle BCD$	3. SSS
4. $\angle ACD \cong \angle BCD$	4. CPCTC
5. $\overline{CM} \cong \overline{CM}$	5. Identity or Reflexive Property of \cong
6. $\triangle ACM \cong \triangle BCM$	6. SAS
7. $\overline{AM} \cong \overline{BM}$	7. CPCTC
8. $\angle AMC \cong \angle BMC$	8. CPCTC
9. $\overline{CD} \perp \overline{AB}$	9. Def of perpendicular lines (If two lines meet to form \cong adjacent angles, then the lines are perpendicular.)

7.

Statements	Reasons
1. $\angle K$ and $\angle T$ are right angles, $\angle 1 \cong \angle 2$	1. Given
2. $\angle K \cong \angle T$	2. All right angles are \cong
3. $\overline{EI} \cong \overline{EI}$	3. Identity or Reflexive Property of \cong
4. $\triangle KIE \cong \triangle TIE$	4. AAS

8. 1. Suppose \overline{CD} does bisect $\angle ACB$
 2.

Statements	Reasons
$\angle ACD \cong \angle BCD$	Definition of angle bisector
$\angle ADC \cong \angle BDC$	Def of perpendicular lines
$\overline{CD} \cong \overline{CD}$	Identity or Reflexive Property of \cong
$\triangle ACD \cong \triangle BCD$	ASA
$\overline{AC} \cong \overline{BC}$	CPCTC

This contradicts the given that $\triangle ABC$ is scalene.

3. Supposition is false. Therefore, \overline{CD} does not bisect $\angle ACB$.

Refer to notes in class for proofs of theorems (#9) and constructions (#10 and #11).