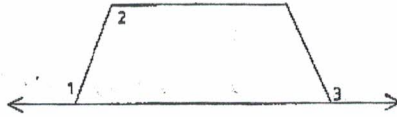


Geometry (E)
Substitution Property

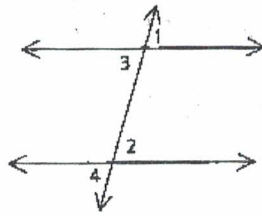
Name: KEY

2 Given: $\angle 1 \cong \angle 2$,
 $\angle 2 \cong \angle 3$
Conclusion: $\angle 1 \cong \angle 3$



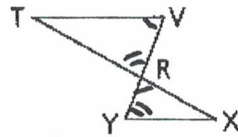
Statements	Reasons
1.) $\angle 1 \cong \angle 2$	1.) GIVEN
2.) $\angle 2 \cong \angle 3$	2.) GIVEN
3.) $\angle 1 \cong \angle 3$	3.) SUBSTITUTION PROPERTY

3 Given: $\angle 1 \cong \angle 3$,
 $\angle 2 \cong \angle 3$,
 $\angle 2 \cong \angle 4$
Prove: $\angle 1 \cong \angle 4$



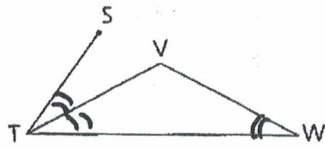
Statements	Reasons
1) $\angle 1 \cong \angle 3$	1.) GIVEN
2) $\angle 2 \cong \angle 3$	2.) GIVEN
3) $\angle 2 \cong \angle 4$	3.) GIVEN
4) $\angle 1 \cong \angle 4$	4.) SUBSTITUTION PROPERTY

10 Given: $\angle V \cong \angle YRX$,
 $\angle Y \cong \angle TRV$
Prove: $\angle V \cong \angle Y$



Statements	Reasons
1.) $\angle V \cong \angle YRX$	1) GIVEN
2.) $\angle Y \cong \angle TRV$	2) GIVEN
3.) $\angle TRV \cong \angle YRX$	3) IF 2 ANGLES VERTICAL ANGLES, THEN THEY ARE \cong
4.) $\angle V \cong \angle Y$	4) SUBSTITUTION PROPERTY

- 9 $\angle W \cong \angle STV$;
 \overrightarrow{TV} bisects $\angle STW$.
 $\angle W = (2x - 5)^\circ$,
 $\angle VTW = (x + 15)^\circ$
 Find: $m\angle STW$

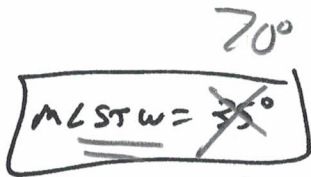


$$2x - 5 = x + 15$$

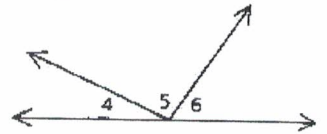
$$\underline{x = 20}$$

$$2(20) - 5 = 35$$

$$2x + 15 = 35$$



- 12 Angles 4, 5, and 6 are in the ratio 2:5:3.
 Find the measure of each angle.



$$2x + 5x + 3x = 180$$

$$10x = 180$$

$$\underline{x = 18}$$

$$\begin{aligned} 2(18) &= 36^\circ \\ 5(18) &= 90^\circ \\ 3(18) &= 54^\circ \end{aligned}$$

- 14 When one-half the supplement of an angle is added to the complement of the angle, the sum is 120° . Find the measure of the complement.

$$\frac{1}{2}(180 - x) + 90 - x = 120$$

$$90 - \frac{1}{2}x + 90 - x = 120$$

$$-\frac{3}{2}x = -60$$

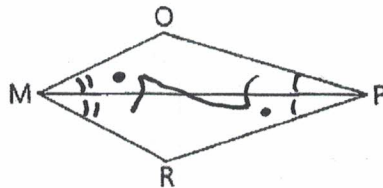
MULTIPLY BY $-\frac{2}{3}$

$$\underline{x = 40}$$

ANGLE = 40°

COMP = 50°

- 7 Given: $\angle OMP \cong \angle RPM$;
 \overrightarrow{MP} bisects $\angle OMR$.
 \overrightarrow{PM} bisects $\angle OPR$.
 Prove: $\angle OMR \cong \angle OPR$



Statements

Reasons

1) $\angle OMP \cong \angle RPM$	1) GIVEN
2) \overrightarrow{MP} BISECTS $\angle OMR$	2) GIVEN
3) \overrightarrow{PM} BISECTS $\angle OPR$	3) GIVEN
4) $\angle OMP \cong \angle RMP$	4) IF A RAY BISECTS AN ANGLE, THEN IT DIVIDES AN ANGLE INTO 2 \cong \angle s.
5) $\angle OPM \cong \angle RPM$	5) SAME AS STEP # 4.
6) $\angle OPM \cong \angle RMP$	6.) SUBSTITUTION PROPERTY
7) $\angle OMR \cong \angle OPR$	7.) ADDITION PROPERTY