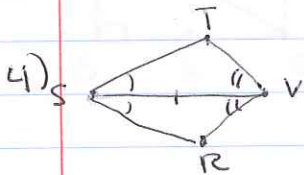


4-5 Triangle Congruence: ASA, AAS, HL

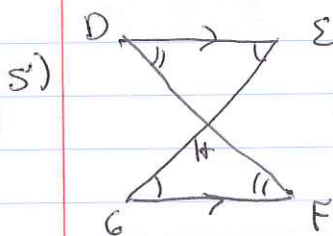
P256 Ex. 1, 4-8, 20, 37, 39

1) A triangle contains $\angle ABC$ and $\angle ACB$ with \overline{BC} "included" or "closed in".

NOTICE SIDE \overline{BC} IS INCLUDED IN BOTH ANGLES!



Statements	Reasons
\overline{VS} bisects $\angle RST$	Given
$\angle TSV \cong \angle VSR$	Def. of bisects
\overline{VS} bisects $\angle RVT$	Given
$\angle TVS \cong \angle RVS$	Defn of bisects
$\overline{VS} \cong \overline{VS}$	Reflexive P.O.C
$\triangle VRS \cong \triangle VTS$	ASA $\triangle \cong$ Thm



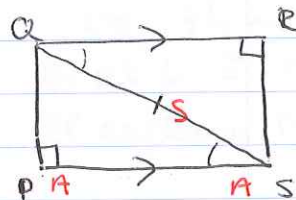
Statements	Reasons
① $\overline{DE} \parallel \overline{GF}$	① Given
② $\angle DEH \cong \angle HGF$	② Alternate Exterior
$\angle EDH \cong \angle GFH$	LS Thm

That's all we've got - no way to show a pair of corresponding sides congruent so no way to say the triangles are congruent.

6) Given: $\angle R$ & $\angle P$ are right angles

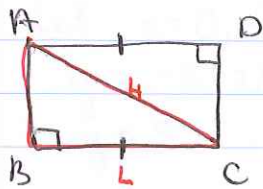
$\overline{QR} \parallel \overline{SP}$

Prove $\triangle QPS \cong \triangle SRQ$



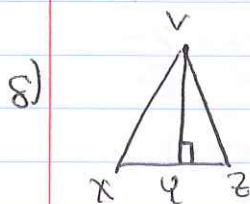
$\overline{QS} \cong \overline{QS}$	reflexive P.O.C.
$\overline{QR} \parallel \overline{PS}$	Given
$\angle RQS \cong \angle PSQ$	Alternate Interior
$\angle R$ and $\angle P$ are rt \angle s	Given
$\angle P \cong \angle R$	Right angle congruence Thm
$\triangle QPS \cong \triangle SRQ$	AAS $\triangle \cong$ Thm

7) Can we use HL \cong ? If not, what else do we need?



Both right triangles \checkmark
 know 1 pair of legs \cong , Given $\overline{AD} \cong \overline{BC}$
 know hypotenuse congruent
 by the reflexive property

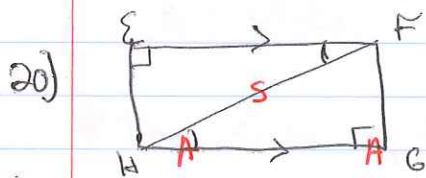
Yes, we can use HL $\Delta \cong$ Thm



Both right triangles \checkmark
 know 1 pair of legs congruent by
 the reflexive property $\overline{VY} \cong \overline{VY}$

Need to know hypotenuse congruent
 $\overline{VX} \cong \overline{VZ}$

Can't use HL \cong Thm without the H!



Statements	Reasons
① $\overline{EF} \cong \overline{HG}$	① given
② $\angle EFH \cong \angle GHF$	② ALTERNATE Interior Angles Thm
③ $\angle E \cong \angle G$	③ rt $\angle \cong$ Thm
④ $\overline{FH} \cong \overline{FH}$	④ reflexive POC

Proof B is incorrect. We can't use HL unless we have 1 pair of corresponding congruent legs and 1 pair of corresponding congruent hypotenuses.

37) Identify the x and y intercepts

Let $x=0$, find y intercept

$$y = -5(0) + 5$$

$$y = 5$$

$(0, 5)$

Let $y=0$, find x intercept

$$0 = -5x + 5$$

$$\begin{array}{r} -5 \qquad \qquad -5 \\ \hline -5 = -5x \end{array}$$

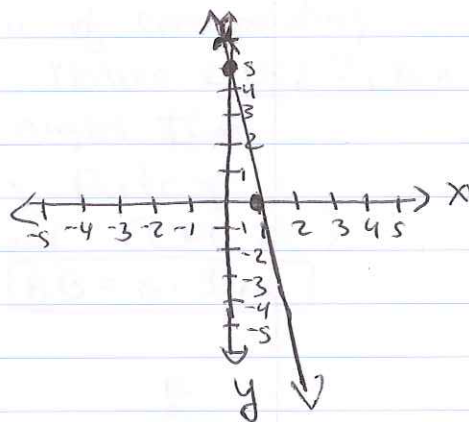
$$\frac{-5}{-5} = \frac{-5x}{-5}$$

$$1 = x$$

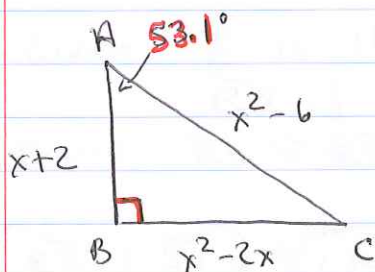
$(1, 0)$

Graph the Line

- plot intercepts
- connect points
- extend Line



39)



* The sum of the angles of a triangle is 180° .

$$m\angle A + m\angle B + m\angle C = 180^\circ$$

$$53.1 + 90 + m\angle C = 180$$

$$143.1 + m\angle C = 180.0$$

$$\underline{-143.1}$$

$$\underline{-143.1}$$

$$m\angle C = \underline{36.9^\circ}$$