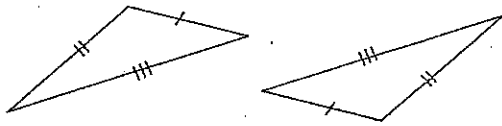
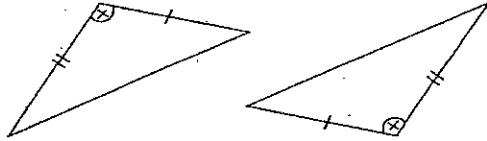


Two triangles are congruent if any one of the following is satisfied

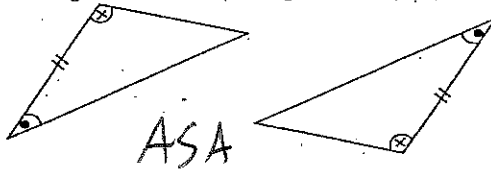
a) corresponding sides are equal (SSS):



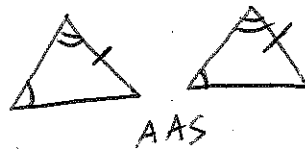
b) two sides and the included angle are equal (SAS)



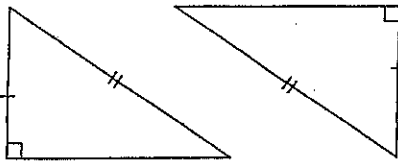
c) two angles and a corresponding side are equal (ASA, AAS)



Remember 5 Ways
SSS, SAS,
ASA, AAS,
HL



d) for right triangles, the hypotenuse and a corresponding side are equal



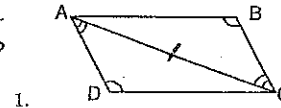
Note:
If $\triangle ABC \cong \triangle PQR$, then
 $\angle A = \angle P, \angle B = \angle Q, \angle C = \angle R$
 $AB = PQ, BC = QR, AC = PR$

Things to look for

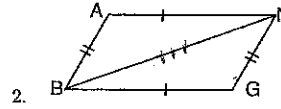
- Vertical Angles
- Same segment
- Parallel line
↳ Alt. Interior Angles

~~IVARKE~~ ~~congruence~~ ~~statement~~ ~~For each part of triangles.~~
Congruency shortcut/conjecture
Congruency statement.

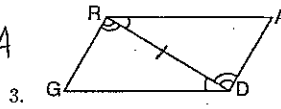
AAS



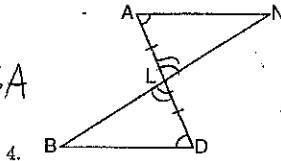
SSS



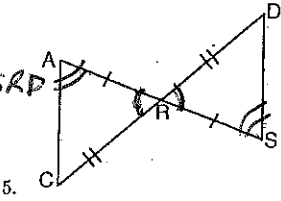
ASA



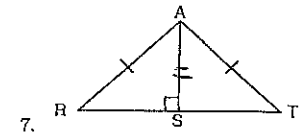
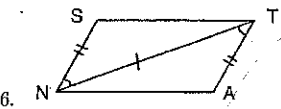
ASA



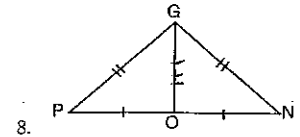
$\triangle ARC \cong \triangle SRD$
SAS



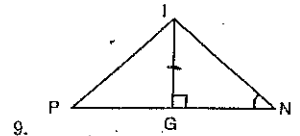
SAS



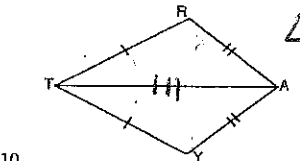
HL



SSS

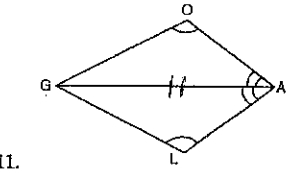


None



DAYTEDART

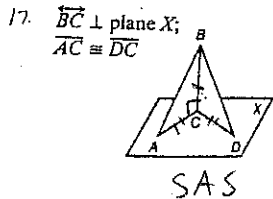
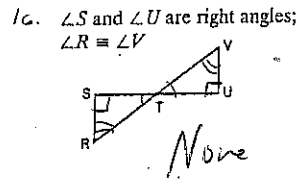
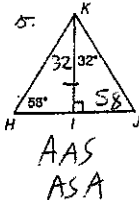
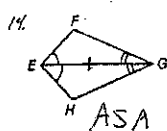
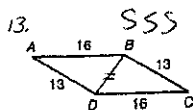
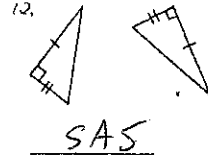
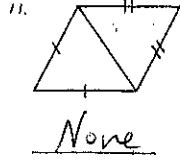
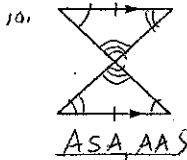
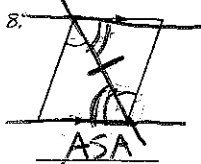
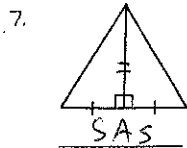
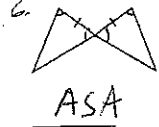
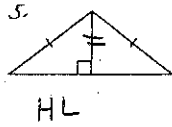
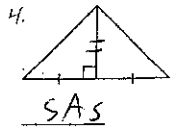
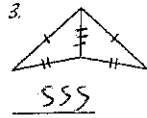
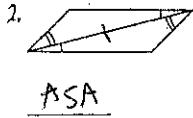
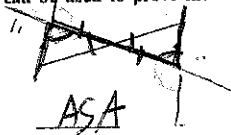
SSS



AAS

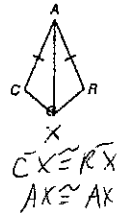
Congruent Triangles

State which congruence method(s), SSS, SAS, ASA, AAS, or HL, can be used to prove the triangles congruent.

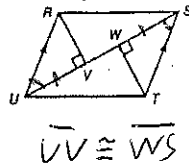


Indicate the additional information needed to prove the triangles congruent by the method shown.

18. $\triangle SAC \cong \triangle SAR$ by SSS



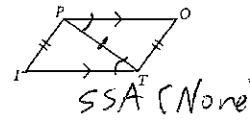
19. $\triangle RUV \cong \triangle TSW$ by ASA



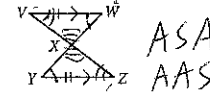
Lesson 4.5 • Are There Other Congruence Shortcuts?

In Exercises 1-6, name a triangle congruent to the given triangle and state the congruence conjecture. If you cannot show any triangles to be congruent from the information given, write "cannot be determined" and explain why.

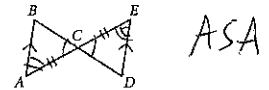
1. $\triangle PIT \cong \triangle TOP$



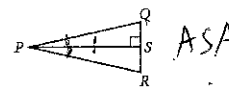
2. $\triangle XVW \cong \triangle XYZ$



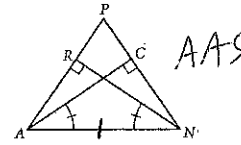
3. $\triangle ECD \cong \triangle ACB$



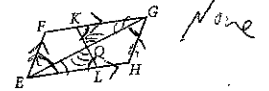
4. \overline{PS} is the angle bisector of $\angle QPR$.
 $\triangle PQS \cong \triangle PRS$



5. $\triangle ACN \cong \triangle NRA$



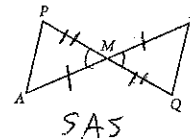
6. $BFGH$ is a parallelogram.
 $GQ = EQ$.
 $\triangle EQL \cong \triangle \underline{\hspace{1cm}}$



In Exercises 14-19, name a triangle congruent to the given triangle and state the congruence conjecture. If you cannot show any triangles to be congruent from the information given, write "cannot be determined" and redraw the triangles so that they are clearly not congruent.

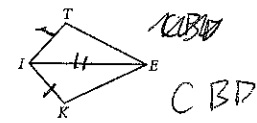
14. M is the midpoint of \overline{AB} and \overline{PQ} .

$\triangle APM \cong \triangle BQM$

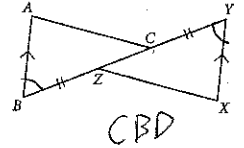


15. KITE is a kite with $KI = TI$.

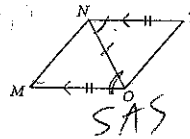
$\triangle KIE \cong \triangle \underline{\hspace{1cm}}$



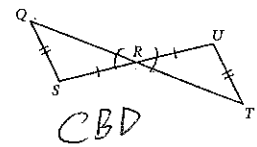
16. $\triangle ABC \cong \underline{\hspace{1cm}}$



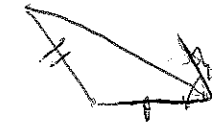
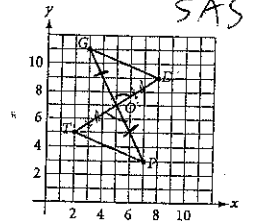
17. $\triangle MON \cong \triangle TVO$



18. $\triangle SQR \cong \underline{\hspace{1cm}}$



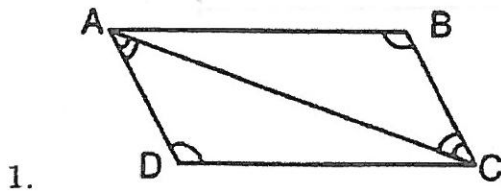
19. $\triangle TOP \cong \triangle DOB$



Name: _____

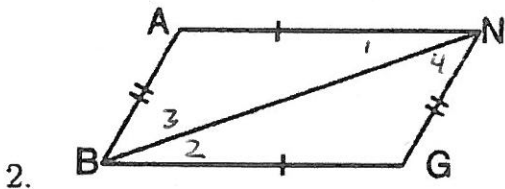
5.3 Triangle Congruence Shortcuts Practice

Study the markings on each of the following figures and write down as many conclusions as you can for can.



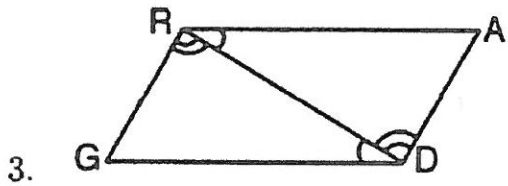
$AC = AC$ Reflexive
 $\triangle DAC \cong \triangle BCA$ AAS
 $DC = AB$ CPCTC
 $AD = BC$ CPCTC

$\angle ACD \cong \angle BAC$ CPCTC



$BN = BN$ Reflexive
 $\triangle NAB \cong \triangle BGN$ SSS
 $\angle A \cong \angle G$ CPCTC

$\angle ANB \cong \angle BGN$ CPCTC
 $\angle BNG \cong \angle NBA$ CPCTC



State if the triangles are congruent, and if so, which congruence shortcut proves them to be congruent.

