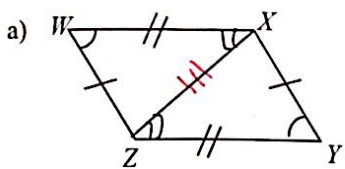
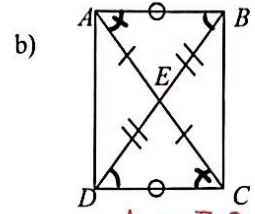


1. Tell which triangle is congruent to the given triangle in each diagram.



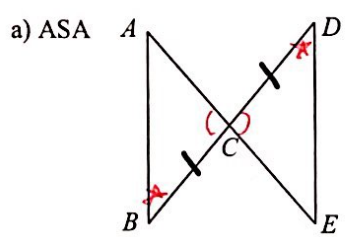
a) $\triangle WXZ \cong \triangle YZX$

**make sure the letters are in the correct order!*



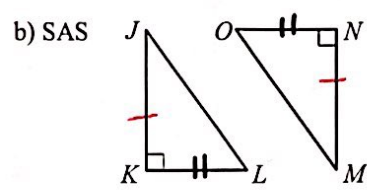
b) $\triangle CED \cong \triangle AEB$

2. State what additional information is needed in order to have congruent triangles.



a) ASA

You would need to know $\angle B \cong \angle D$.



b) SAS

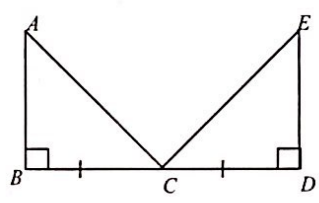
you would need to know $\overline{JK} \cong \overline{NM}$

3. Given $\triangle ABC$ in which $\triangle ABC \cong \triangle ACB$ then what can you conclude about $\triangle ABC$? $\triangle ABC$ is isosceles.

4. Given $\triangle ABC$ in which $\triangle ABC \cong \triangle CAB$ then what can you conclude about $\triangle ABC$? $\triangle ABC$ is equilateral

5. In the diagram, if $\overline{BC} \cong \overline{CD}$ then in order to prove $\triangle ABC \cong \triangle EDC$ by HL, what additional two sides must be congruent?

$\overline{AC} \cong \overline{CE}$ *need the hypotenuses*

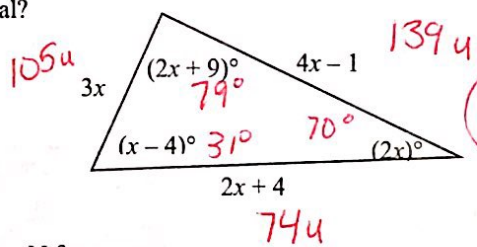


6. Is the following triangle isosceles, scalene, or equilateral?

$$2x + 9 + x - 4 + 2x = 180$$

$$5x + 5 = 180$$

$$\frac{5x}{5} = \frac{175}{5} \quad x = 35$$



Scalene

For numbers 7- 15, write A for always, S for sometimes, or N for never.

7. Two triangles are congruent if two angles and a side of one are congruent to two angles and a side of the other. *Sometimes - needs to be corresponding*

8. If $\triangle ABC \cong \triangle DEF$, then $\overline{AB} \cong \overline{DF}$. *Sometimes*

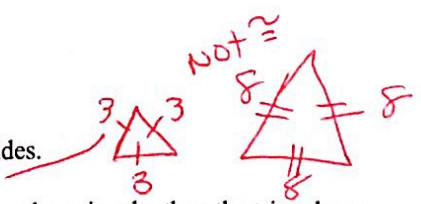
9. The three angles in $\triangle ABC$ are congruent to the respective angles in $\triangle PQR$, so the triangles are congruent. *Sometimes - these Δ 's would be similar*

10. A triangle has angles of measures $60^\circ, 60^\circ, 60^\circ$. *Sometimes*

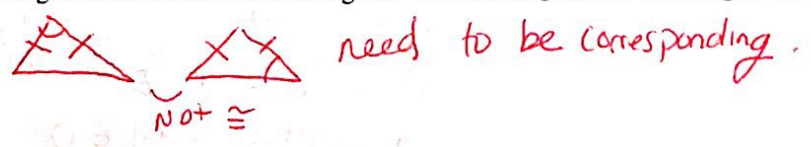
11. An acute triangle has 3 acute angles. *Always*

12. A right triangle has 3 right angles. *Never*

13. A triangle with 3 congruent sides is congruent to another triangle with 3 congruent sides. *Sometimes*



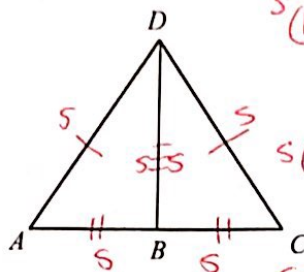
14. If two sides and an angle of one triangle are congruent to two sides and an angle of another triangle, then the triangles are congruent. *Sometimes*



15. Right triangles are congruent. *Sometimes.*

Write a two column proof:

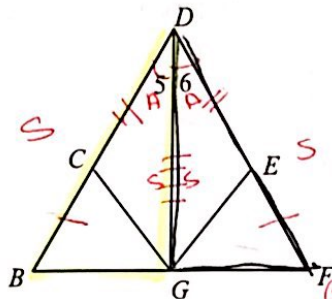
16. Given: $\overline{AD} \cong \overline{CD}$
 B is the midpoint of \overline{AC}
 Prove: $\triangle ABD \cong \triangle CBD$



Statements
 ① $\overline{AD} \cong \overline{CD}$
 B is the mp of \overline{AC}
 diagram
 ② $\overline{AB} \cong \overline{BC}$
 ③ $\overline{DB} \cong \overline{DB}$
 ④ $\triangle ABD \cong \triangle CBD$

Reasons
 ① Given
 ② If a pt is the mp, then it divides the seg into 2 \cong segs.
 ③ Reflexive POC
 ④ SSS

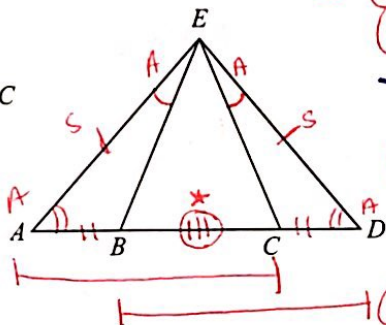
17. Given: $\overline{BC} \cong \overline{FE}$
 $\overline{DC} \cong \overline{DE}$
 $\angle 5 \cong \angle 6$
 Prove: $\triangle BDG \cong \triangle FDG$



Statements
 ① $\overline{BC} \cong \overline{FE}$
 $\overline{DC} \cong \overline{DE}$
 ② $\angle 5 \cong \angle 6$
 diagram
 ③ $\overline{BD} \cong \overline{FD}$
 ④ $\triangle BDG \cong \triangle FDG$

Reasons
 ① Given
 ② If 2 \cong segs are added to 2 \cong segs, then the sums are \cong .
 ③ Reflexive POC
 ④ SAS

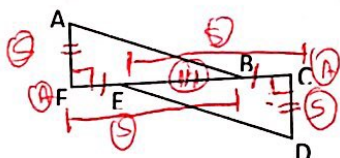
18. Given: $\angle AEB \cong \angle DEC$
 $\overline{AE} \cong \overline{DE}$
 $\angle A \cong \angle D$
 Prove: $\overline{AC} \cong \overline{BD}$



Statements
 ① $\angle AEB \cong \angle DEC$
 $\overline{AE} \cong \overline{DE}$
 $\angle A \cong \angle D$
 diagram
 ② $\triangle AEB \cong \triangle DEC$
 ③ $\overline{AB} \cong \overline{CD}$
 ④ $\overline{BC} \cong \overline{BC}$
 ⑤ $\overline{AC} \cong \overline{BD}$

Reasons
 ① Given
 ② ASA
 ③ CPCTC
 ④ Reflexive POC
 ⑤ If \cong segs are added to \cong segs, then their sums are \cong .

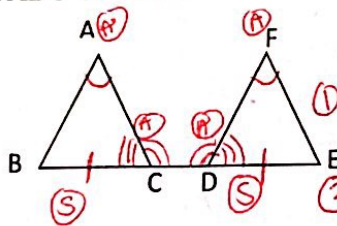
19. Given: $\overline{AF} \perp \overline{FB}$, $\overline{CD} \perp \overline{CE}$, $\overline{FE} \cong \overline{BC}$, $\overline{AF} \cong \overline{CD}$
 Prove: $\triangle ABF \cong \triangle DEC$



Statements
 ① $\overline{AF} \perp \overline{FB}$, $\overline{CD} \perp \overline{CE}$, $\overline{FE} \cong \overline{BC}$
 $\overline{AF} \cong \overline{CD}$, diagram
 ② $\angle F$ and $\angle C$ are right \angle s
 ③ $\angle F \cong \angle C$
 ④ $\overline{EB} \cong \overline{EB}$
 ⑤ $\overline{FB} \cong \overline{EC}$
 ⑥ $\triangle ABF \cong \triangle DEC$

Reasons
 ① Given
 ② If segs are \perp , then they form right \angle s.
 ③ If \angle s are right \angle s, then they are \cong .
 ④ Reflexive
 ⑤ If \cong segs are added to \cong segs, then the sums are \cong .
 ⑥ SAS

20. Given: $\angle A \cong \angle F$, $\overline{BC} \cong \overline{DE}$, $\angle ACD \cong \angle FDC$
 Prove: $\triangle ABC \cong \triangle FED$



Statements
 ① $\angle A \cong \angle F$, $\overline{BC} \cong \overline{DE}$
 $\angle ACD \cong \angle FDC$, diagram
 ② $\angle ACD$ and $\angle ACB$ form a linear pair
 $\angle FDC$ and $\angle FDE$ form a linear pair
 ③ $\angle ACD$ and $\angle ACB$ are supp.
 $\angle FDC$ and $\angle FDE$ are supp.
 ④ $\angle ACB \cong \angle FDE$
 ⑤ $\triangle ABC \cong \triangle FED$

Reasons
 ① Given
 ② Assumed by diagram.
 ③ If \angle s form a linear pair, then they are supp.
 ④ If angles are supp to \cong \angle s, then they are \cong .
 ⑤ AAS