Geometry Review Ch. 4
Test Ch. 4 is tomorrow!
Quiz 4.7-4.8 today

Possible construction(s) on test SSS SAS ASA AAS

At most: 1 coordinate proof
1 regular proof

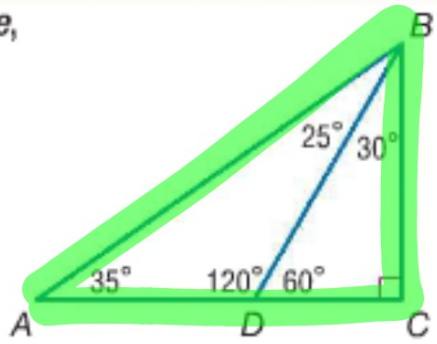
4-1 Classifying Triangles

Classify each triangle as *acute*, *equiangular*, *obtuse*, or *right*.

11. △*ADB*

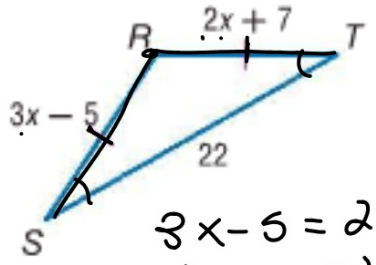
12. △*BCD*

13. △*ABC*



ALGEBRA Find x and the measures of the unknown sides of each triangle.

14.



$3x-5 = 2x+7$

$-2x+5 \quad -2x+5$

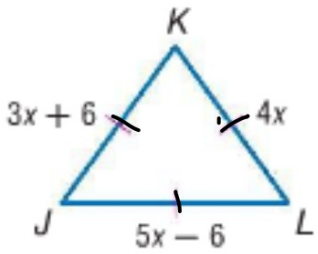
$x = 12$

$x = 12$

$RT = 31$

$RS = 31$

15.



$5x-6 = 4x$

$-5x \quad -5x$

$-6 = -x$

$x = 6$

$KJ = 24$

$KL = 24$

$JL = 24$

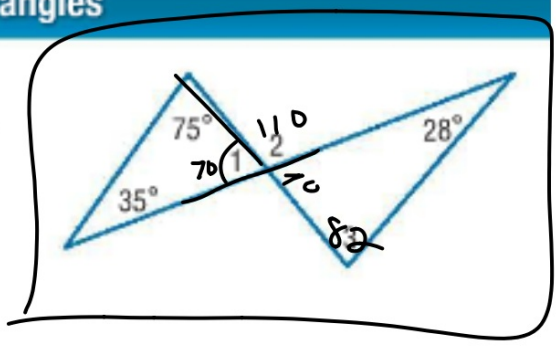
4-2 Angles of Triangles

Find the measure of each numbered angle.

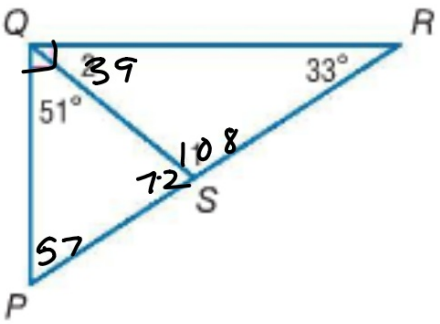
17. $\angle 1 = 7$

18. $\angle 2 = 110$

19. $\angle 3 = 82$



Find the measure of each numbered angle.



$\angle 1 = 108$

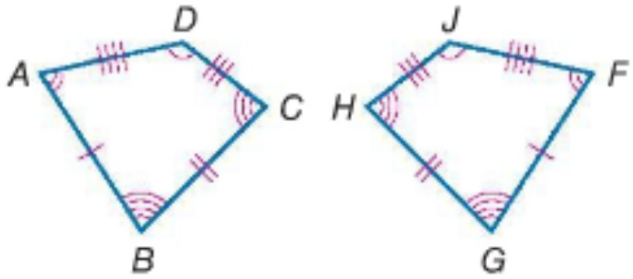
$\angle 2 = 39$

$\angle 3 = 72$

4-3 Congruent Triangles

Show that the polygons are congruent by identifying all congruent corresponding parts. Then write a congruence statement.

21.



$\angle A \cong \angle F$ $\quad \overline{CD} \cong \overline{HJ}$

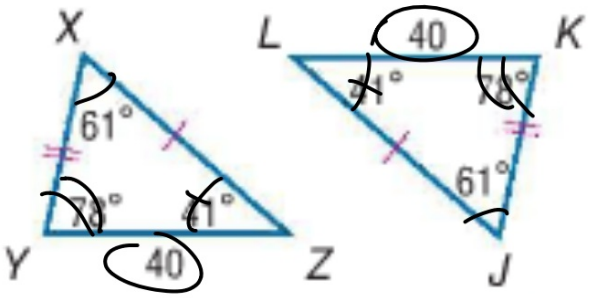
$\angle D \cong \angle J$ $\quad \overline{AD} \cong \overline{FJ}$

$\angle C \cong \angle H$ $\quad \overline{BC} \cong \overline{GH}$

$\angle B \cong \angle G$ $\quad \overline{AB} \cong \overline{FG}$

$ABCD \cong FGHJ$

22.

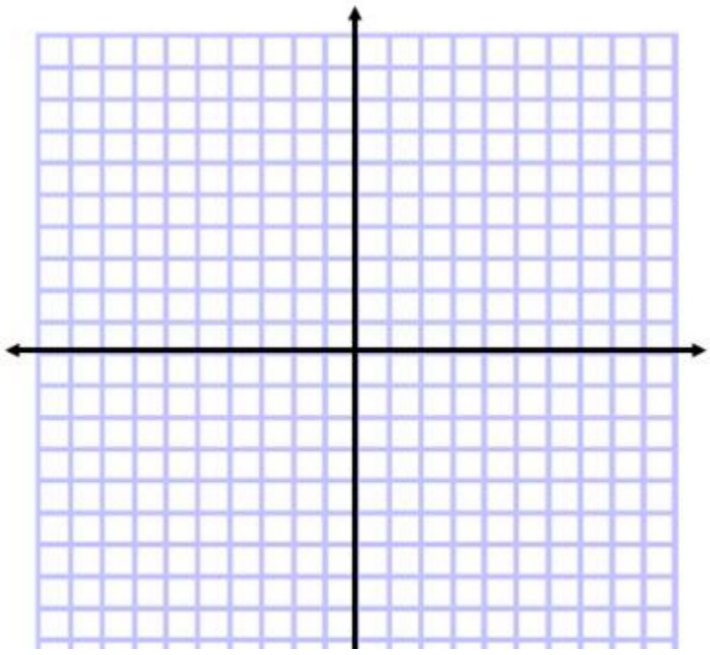


△XYZ ≅ △JKL

4-4 Proving Triangles Congruent—SSS, SAS

Determine whether $\triangle ABC \cong \triangle XYZ$. Explain.

24. $A(5, 2)$, $B(1, 5)$, $C(0, 0)$, $X(-3, 3)$, $Y(-7, 6)$, $Z(-8, 1)$

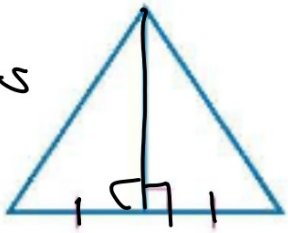


SSS, SAS, ASA, AAS, but not ~~SSA~~

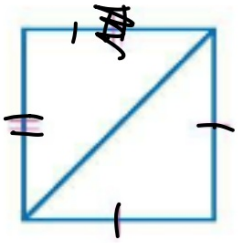
Determine which postulate can be used to prove that the triangles are congruent. If it is not possible to prove that they are congruent, write *not possible*.

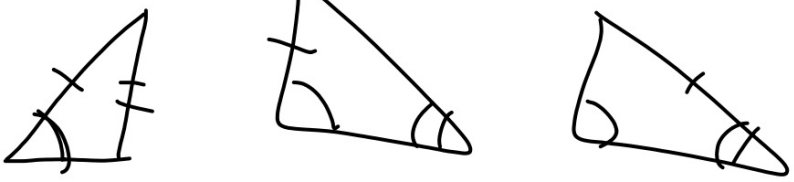
26.

SAS



27.

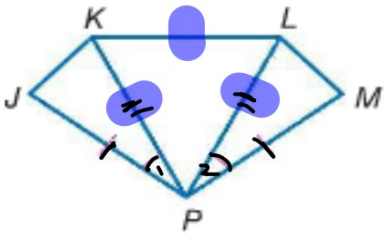




Write a two-column proof.

Given: $\triangle KPL$ is equilateral.
$\overline{JP} \cong \overline{MP}$,
$\angle JPK \cong \angle MPL$

Prove: $\triangle JPK \cong \triangle MPL$



Statements	Reasons
1. $\triangle KPL$ is equilateral.	1. Given
2. $\overline{PK} \cong \overline{PL}$	2. Def. of Equilateral $\triangle$
3. $\overline{JP} \cong \overline{MP}$	3. Given
4. $\angle JPK \cong \angle MPL$	4. Given
5. $\triangle JPK \cong \triangle MPL$	5. SAS

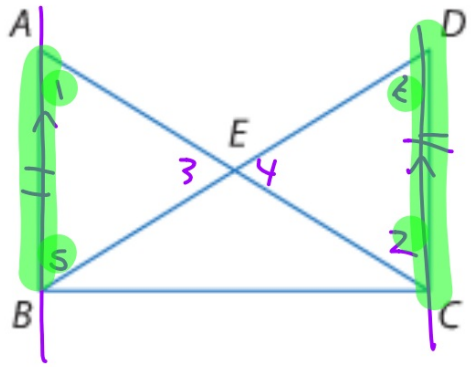
Can be helpful to un-overlap figures

4-5 Proving Triangles Congruent—ASA, AAS

Write a two-column proof.

29. Given: $\overline{AB} \parallel \overline{DC}, \overline{AB} \cong \overline{DC}$

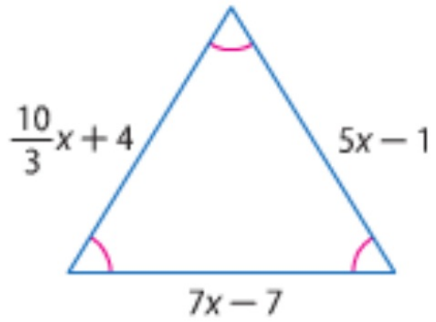
Prove: $\triangle ABE \cong \triangle CDE$



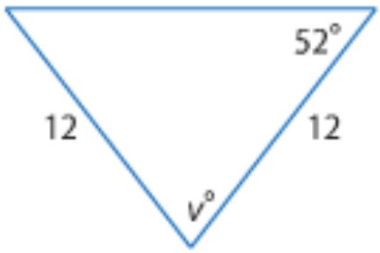
4-6 Isosceles and Equilateral Triangles

Find the value of each variable.

31.



32.



Example 8

Position and label an equilateral triangle $\triangle XYZ$ with side lengths of $2a$.