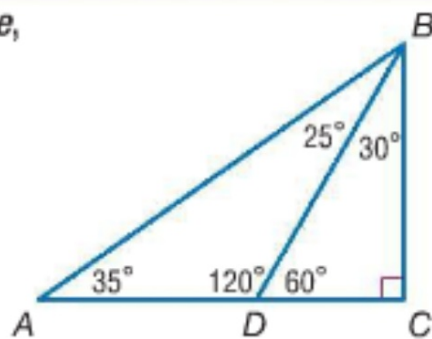Geometry Review Ch. 4
Test Ch. 4 is tomorrow!
Quiz 4.7-4.8 today

Possible construction(s) on test
At most: 1 coordinate proof
1 regular proof

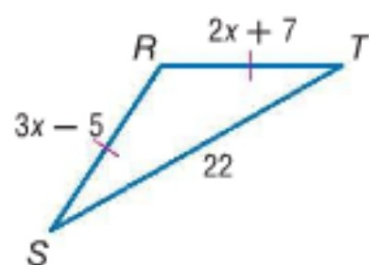## 4-1 Classifying Triangles

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.

R $2x + 7$ T
$3x - 5$
22
S

15.

K
$3x + 6$ $4x$
J $5x - 6$ L
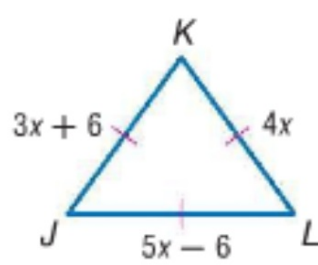
Find the measure of
each numbered angle.

17. $\angle 1$

18. $\angle 2$

19. $\angle 3$

75° 1 2 28°

35° 3
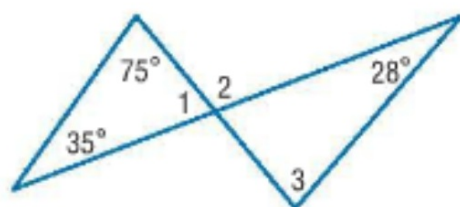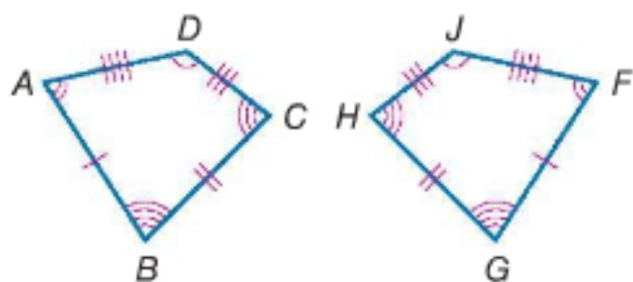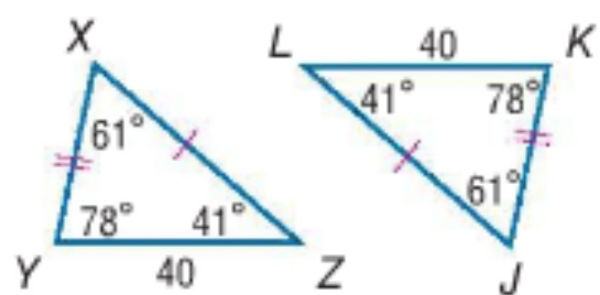
Find the measure of each numbered angle.
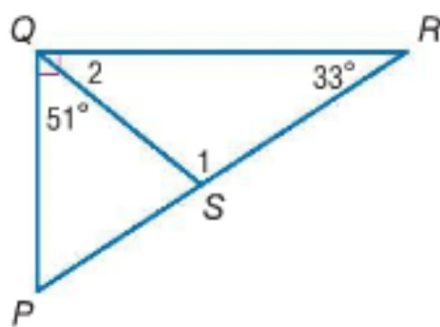
Show that the polygons are congruent by identifying all congruent corresponding parts. Then write a congruence statement.
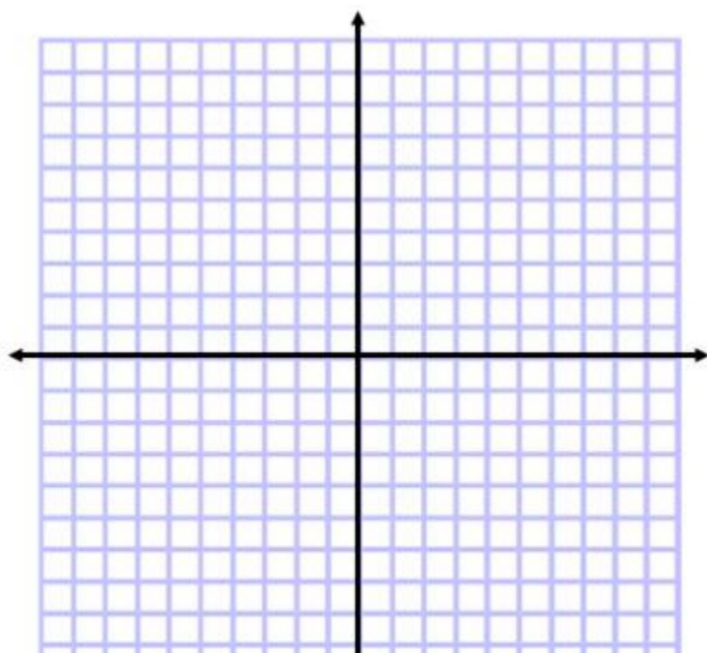
21.

22.

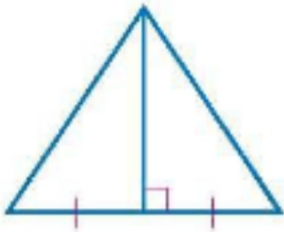Determine whether $\triangle ABC \cong \triangle XYZ$. Explain.

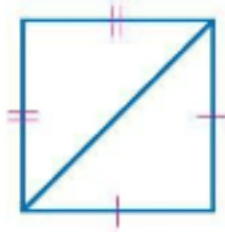**24.** $A(5, 2)$, $B(1, 5)$, $C(0, 0)$, $X(-3, 3)$, $Y(-7, 6)$, $Z(-8, 1)$

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
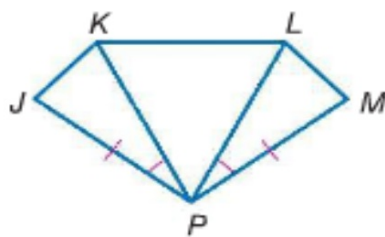are congruent, write *not possible*.

26.

27.

Write a two-column proof.

Given: $\triangle KPL$ is equilateral.

$\overline{JP} \cong \overline{MP}$,

$\angle JPK \cong \angle MPL$

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

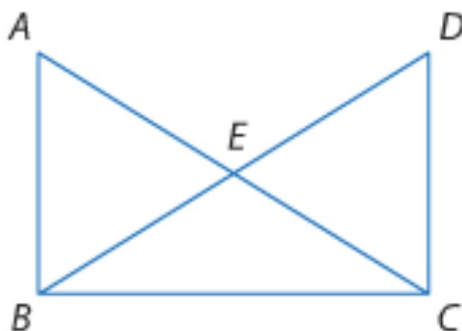| Statements	Reasons
1. $\triangle KPL$ is equilateral.	1. Given
2. $\overline{PK} \cong \overline{PL}$	2. Def. of Equilateral $\triangle$
3. $\overline{JP} \cong \overline{MP}$	3. Given
4. $\angle JPK \cong \angle MPL$	4. Given
5. $\triangle JPK \cong \triangle MPL$	5. SAS

Can be helpful to un-overlap figures

Write a two-column proof.

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

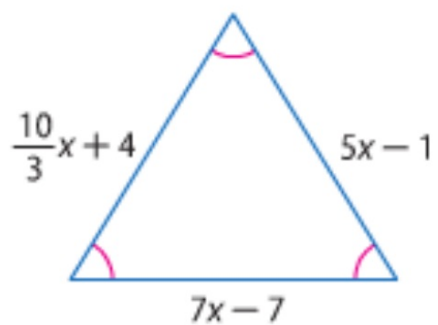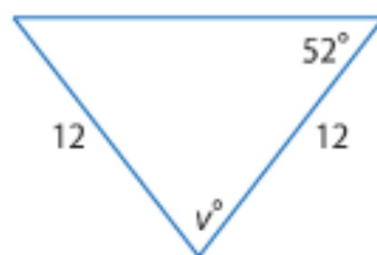**Prove:** $\triangle ABE \cong \triangle CDE$

Find the value of each variable.

31.

$\frac{10}{3}x + 4$ $5x - 1$
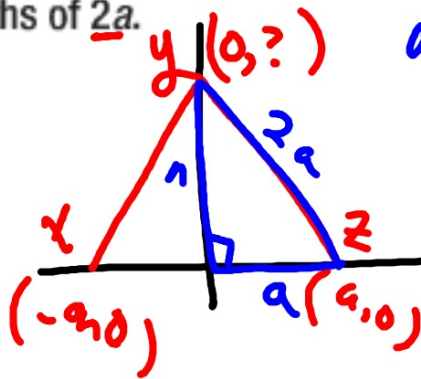
$7x - 7$

32.

$52°$

12 12

$v°$

Example 8

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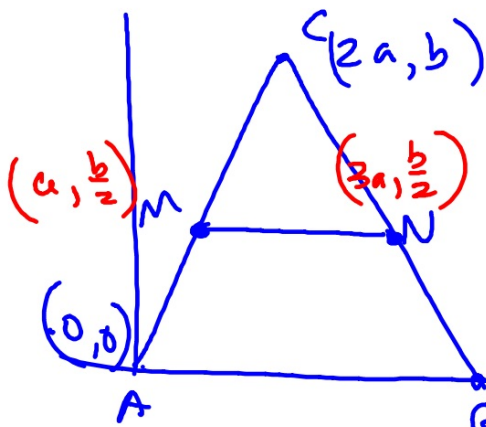

according to P.T.

$$a^2 + n^2 = (2a)^2$$

$$a^2 + n^2 = 4a^2$$

$$-a^2 \qquad\qquad -a^2$$

$$\sqrt{n^2} = \sqrt{3a^2}$$

$$n = \sqrt{3}\, a$$

$$\left(0, \sqrt{3}\, a\right)$$

Given m is mp N is mp
Prove $\overline{MN} \parallel AB$

$C(2a, b)$

$(a, \frac{b}{2})$ M

$(3a, \frac{b}{2})$ N

$(0,0)$

A

$B(4a, 0)$

Coord for M $\frac{0+2a}{2}$ $\frac{0+b}{2}$ $(a, \frac{b}{2})$

Coord for N $\frac{2a+4a}{2}$ $\frac{b+0}{2}$ $(3a, \frac{b}{2})$

Slope MN $\frac{0}{2a} = 0$

Slope AB $\frac{0}{4a} = 0$

Same slope so $\overline{MN} \parallel \overline{AB}$