Name _____*Answers*_____ Date _____ Per_____

Geometry - Chapter 4 Review (Part 1)

Identify each statement as true (T) or false (F). For many of the problems, it would help (but not necessary) to make a drawing or to do a counterexample.

1) A quadrilateral is a triangle with all the sides equal in measure   *F*

2) The base angles of an isosceles triangle are supplementary.   *F*

3) If a triangle has two angles of equal measure, then the third angle is acute.   *F*

4) The abbreviation CPCTC stands for the phrase "corresponding parts of constructed   *F*
triangles are concurrent."

5) If $\triangle GYM$ is congruent to $\triangle RAT$, then $\overline{GY}$ is congruent to $\overline{TR}$.   *F*
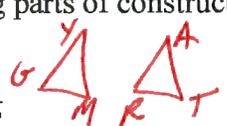
6) If the base angles of an isosceles triangle each measure 48°, then the vertex angle   *F*
has a measure of 132°.   *84°*

7) The sum of the measures of the three angles of an obtuse triangle is greater than   *F*
the sum of the measures of the three angles of an acute triangle. *N. Both 180°*
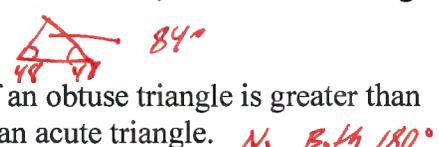
8) If a triangle has two angles of equal measure, then the triangle is equilateral.   *F*

9) An equilateral triangle is never an equiangular triangle.   *F*

$\triangle SAT \cong \triangle GRE$. Complete each congruence statement.

10) $\angle S \cong$ *∠G*   11) $\overline{GR} \cong$ *SA*

12) $\angle E \cong$ *∠T*   13) $\overline{AT} \cong$ *RE*

14) $\triangle ERG \cong$ *△TAS*   15) $\overline{EG} \cong$ *TS*

16) $\triangle REG \cong$ *△ATS*   17) $\angle R \cong$ *∠A*
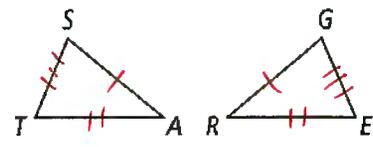
From the information given, determine, which triangles, if any, are congruent. Afterwards, state the congruence postulate that supports the congruence statement. If the triangles cannot be shown to be congruent from the information given, write "Cannot be determined" or simply "CBD."

18) *△TAN ≅ △EFL*   *SSS*

19) *CBD*   *ASS*

20) *△AER ≅ △ACR*   *SSS*

21) CBD ASS

22) △AOS ≅ △ATS SAS

23) △PKA ≅ △RAK SAS

24) △FED ≅ △FAD SSS

25) CBD

26) CBD AAA

27) △WLK ≅ △LWA ASA

28) CBD

29) △DAM ≅ △TUM SAS

**30)** CBD AAA

31) CBD ASS
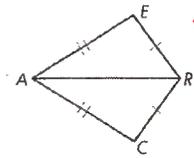
32) △LAS ≅ △RTI AAS
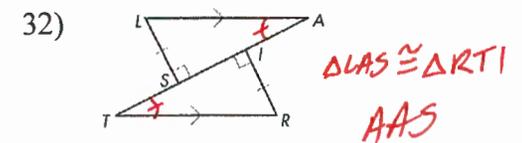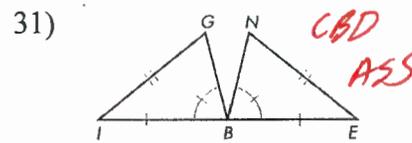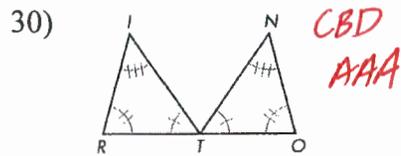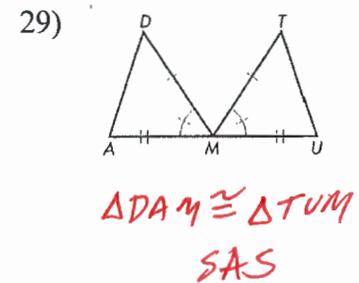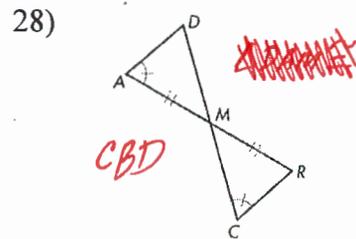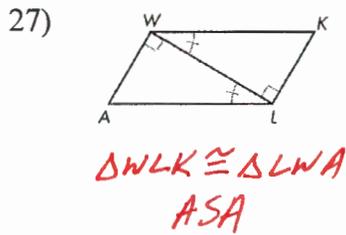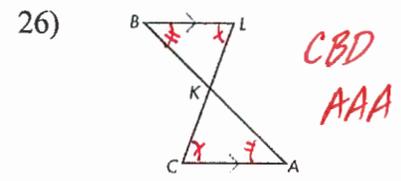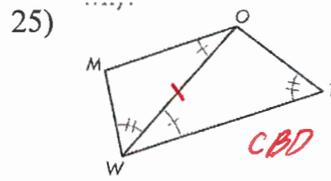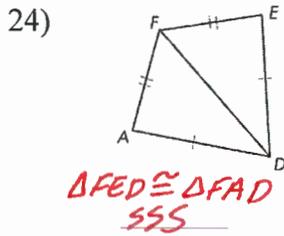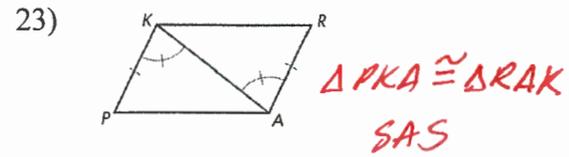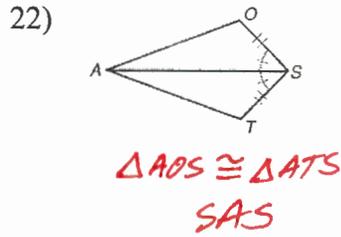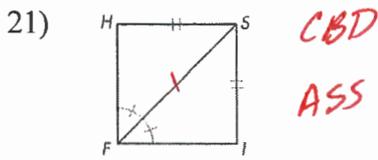
Name a pair of **overlapping** congruent triangles in each diagram. State whether the triangles are congruent by SSS, SAS, ASA, AAS, or HL.

**33)** △ARO ≅ △RAF HL (Tricky) Added sides together

34) △RQM ≅ △QRS SSS

35) △AON ≅ △MOP AAS (Tricky) Added sides together

36) △GRT ≅ △GSO ASA
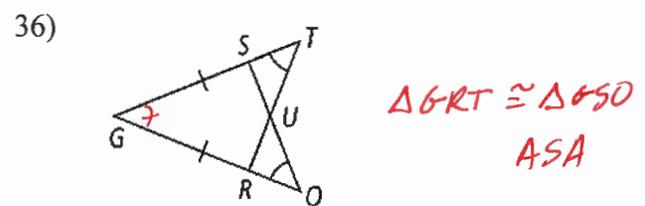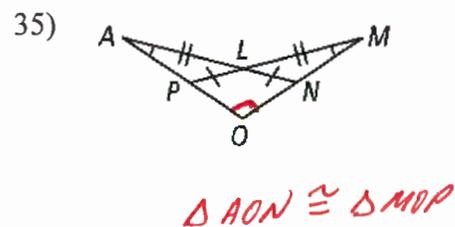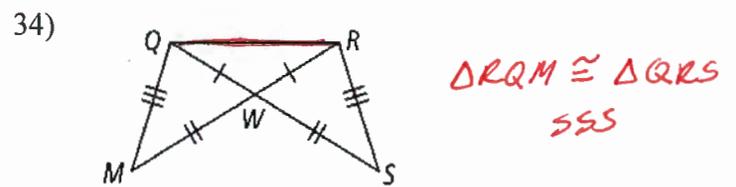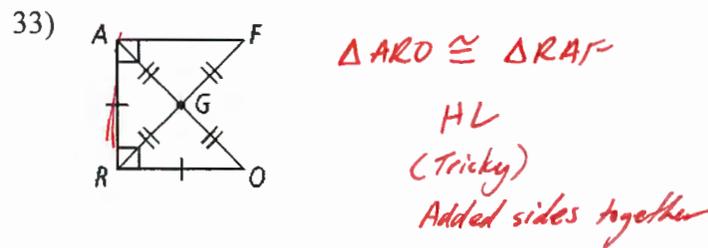
Find the value of the variable.

37)

15°

$x = 15 + 35$

$x = 50°$

x°   35°

38)

$(2x + 13)°$ 57°   y°

$3x°$
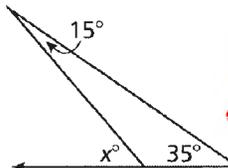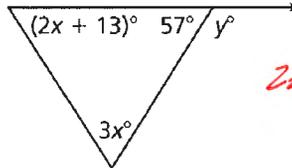
$2x + 13 + 3x + 57 = 180$

$5x + 70 = 180$

$5x = 110$

$x = 22°$

$y = 123°$

39)
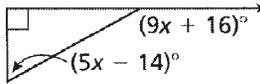
$(9x + 16)°$

$(5x - 14)°$

$9x + 16 = (5x - 14) + 90$

$9x + 16 = 5x + 76$

$4x = 60$

$x = 15°$

40)

$(2x - 9)°$

$(7x + 13)°$

y°

41°
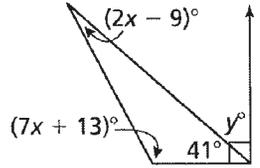
$(7x + 13) + (2x - 9) + 41 = 180$

$9x + 45 = 180$

$9x = 135$

$x = 15°$

$y = 49°$

41)

63°   56°

51   x°   = 12y + 3

56
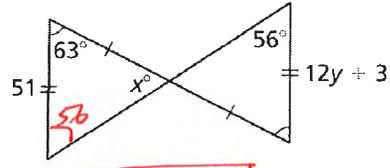
$x = 61°$

$51 = 12y + 3$

$48 = 12y$

$4 = y$

42)
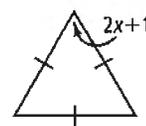
2x+10°

$2x + 10 = 60$

$2x = 50$

$x = 25°$

43)

x°

25°

$x = 65°$

44)

y°

x°   z°   135°
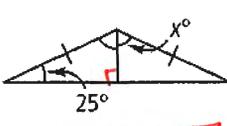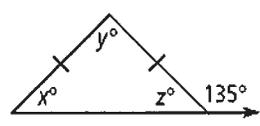
$x = 45°$

$y = 90°$

$z = 45°$

45) Find each lettered angle measure in the diagram below.

$\ell_1 \parallel \ell_2 \parallel \ell_3$
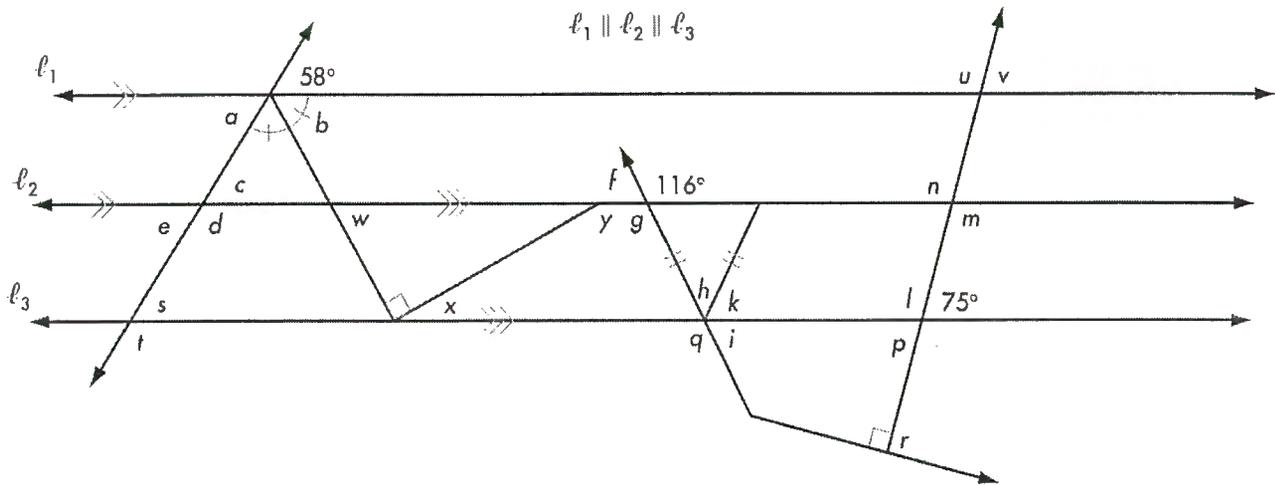
a = __58°__   e = __58°__   i = __64°__   n = __105°__   s = __58°__   w = __61°__

b = __61°__   f = __64°__   k = __64°__   p = __75°__   t = __122°__   x = __29°__

c = __58°__   g = __116°__   l = __105°__   q = __116°__   u = __105°__   y = __151°__

d = __122°__   h = __52°__   m = __105°__   r = __90°__   v = __75°__