Geometry

4.2 Apply Congruence and Triangles

# Congruent ()

size

shape

Exactly the same \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

congruent

Not congruent

D

F

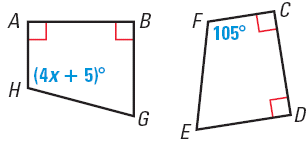
E

A

C

B

* ΔABC ≅ ΔDEF ΔABC ≅ ΔEDF

In the diagram, ABGH CDEF

Identify all the pairs of congruent corresponding parts

AB ≅ CD, BG ≅ DE, GH ≅ EF, AH ≅ CF

∠A ≅ ∠C, ∠B ≅ ∠D, ∠G ≅ ∠E, ∠H ≅ ∠F

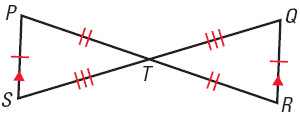
Find the value of x and find .

4x + 5 = 105

4x = 100

x = 25

m∠H = 105°

Show that

All of the corresponding parts of ΔPTS are congruent to those of ΔRTQ by the indicated markings, the Vertical Angle Theorem and the Alternate Interior Angle theorem.

## Third Angle Theorem

Two angles

congruent

Two angles

If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of one triangle are \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of another triangle, then the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

congruent

third angles

75°

20°

?

75°

20°

?

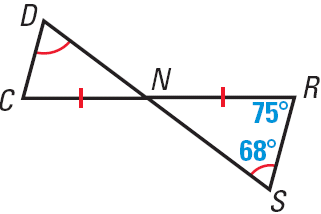
## Properties of Congruence of Triangles

transitive

symmetric

reflexive

Congruence of triangles is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

In the diagram, what is m∠DCN?

; alt int angle theorem (or 3rd angle theorem)

By the definition of congruence, what additional information is needed to know that ΔNDC ≅ ΔNSR?

Assignment: 228 #4-16 even, 17, 20, 26, 28, 32-40 all = 20 total