Geometry

4.7 Use Isosceles and Equilateral Triangles

## Parts of an Isosceles Triangle

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

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

\_\_\_\_\_

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

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

Vertex Angle

Leg

Leg

Base Angles

Base

## Base Angles Theorem

congruent

angles

congruent

triangle

two

If \_\_\_\_\_\_ sides of a \_\_\_\_\_\_\_\_\_\_\_\_\_ are \_\_\_\_\_\_\_\_\_\_\_\_, then the \_\_\_\_\_\_\_\_\_ opposite them are \_\_\_\_\_\_\_\_\_\_\_\_\_.

## Converse of Base Angles Theorem

congruent

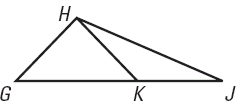
sides

congruent

triangle

two

If \_\_\_\_\_\_ angles of a \_\_\_\_\_\_\_\_\_\_\_\_\_ are \_\_\_\_\_\_\_\_\_\_\_\_\_\_, then the \_\_\_\_\_\_\_\_\_sides opposite them are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Complete the statement

HGK

HKG

If , then ∠ \_\_\_ ≅ ∠ \_\_\_ .

KJ

KH

If ∠KHJ ≅ ∠KJH, then \_\_\_\_ ≅ \_\_\_\_\_ .

## Corollary to the Base Angles Theorem

equiangular

equilateral

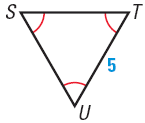
If a triangle is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, then it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## Corollary to the Converse of Base Angles Theorem

equilateral

equiangular

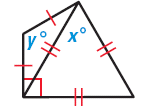
If a triangle is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, then it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Find ST

5

Find m∠T

180° / 3 = 60°

Find the values of x and y

x = 60; equilateral triangle

Each base angle by y; 60 + ? = 90 🡪 ? = 30

Angle sum theorem: 30 + 30 + y = 180 🡪 y = 120

What triangles would you use to show that ΔAED is isosceles in a proof?

8 ft

E

D

C

B

A

8 ft

ΔABD, ΔDCA

Assignment: 267 #2-20 even, 24-34 even, 38, 40, 46, 48, 52-60 even = 25 total