Isosceles & Equilateral Triangles

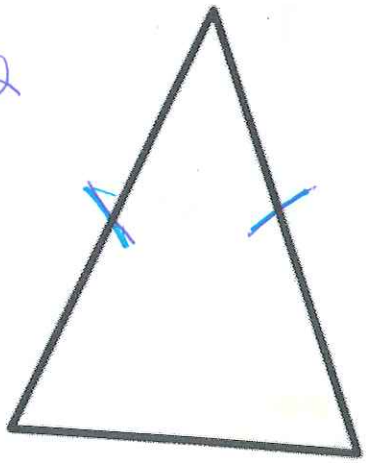
Vocabulary

Base Angles Theorem & its Converse

Corollary to the Base Angles Theorem

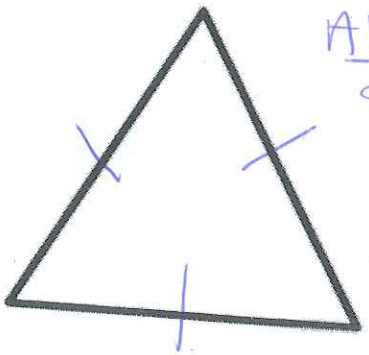
Isosceles

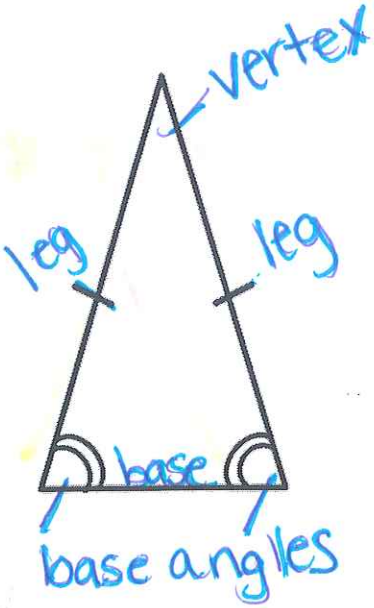
exactly 2 sides ≅

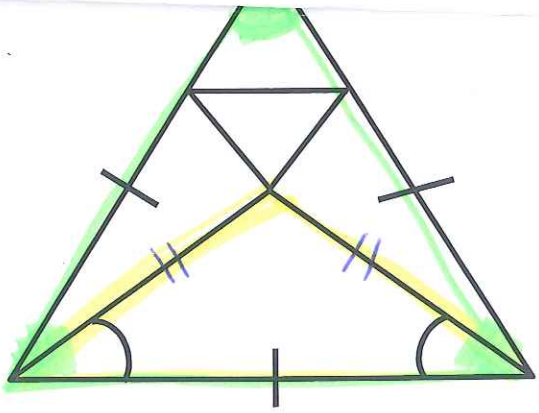


Equilateral

ALL sides ≅







equilateral
all angles 60°

isosceles

Vocabulary

Base Angles Theorem & its Converse

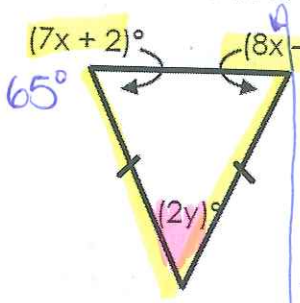
Corollary to the Base Angles Theorem

Base Angles Theorem:

If two sides of a triangle are congruent, then the angles opposite them are congruent.

Find the values of x and y.

1



$8(9)-7=65°$

$7x+2=8x-7$

$-7x \quad -7x$

$2=x-7$

$+7 \quad +7$

$9=x$

$180=65+65+2y$

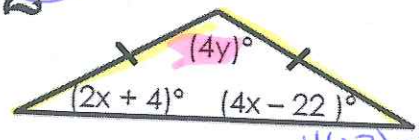
$180=130+2y$

$50=2y$

$25=y$

Try

2



$2x+4=4x-22$

$26=2x$

$13=x$

$4(13)-22$

$=30°$

$180=30+30+4y$

$180=60+4y$

$120=4y$

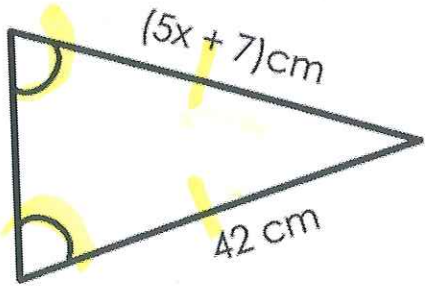
$y=30$

Converse of the Base Angles Theorem:

If two angles of a triangle are congruent, then the sides opposite them are congruent.

Find the value of x.

3

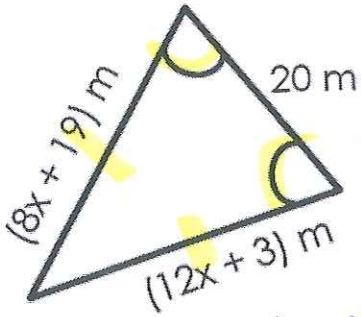


$5x+7=42$

$5x=35$

$x=5$

4



$8x+19=12x+3$

$16=4x$

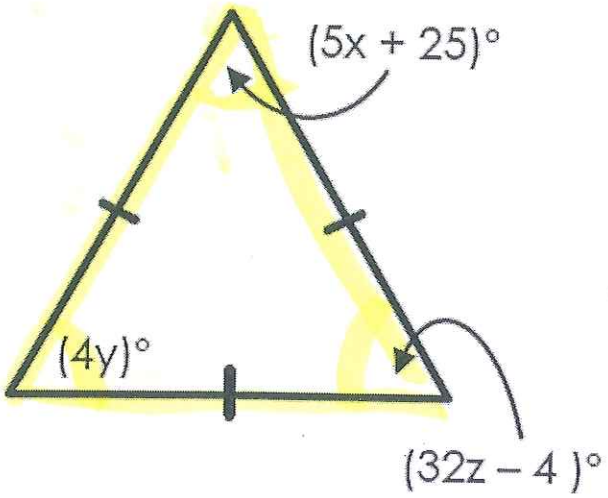
$4=x$

Base Angles Theorem & its Converse

Corollary to the Base Angles Theorem:

If a triangle is equilateral, then it is equiangular.

5 Find the value of x, y, and z.



$5x+25=60$

$x=7$

$32z-4=60$

$z=2$

$4y=60$

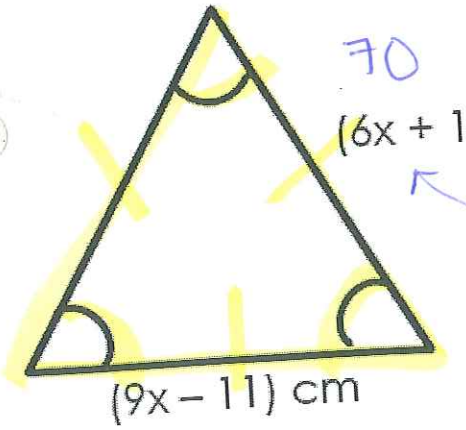
$y=15$

Corollary to the Converse of the Base Angles Theorem:

If a triangle is equiangular, then it is equilateral.

add up all the sides

6 **Find the perimeter of the triangle.**



$6x+16=9x-11$

$27=3x$

$9=x$

$6(9)+16=70$

$70\cdot 3=210\text{ cm}$