Isosceles & Equilateral Triangles

Vocabulary

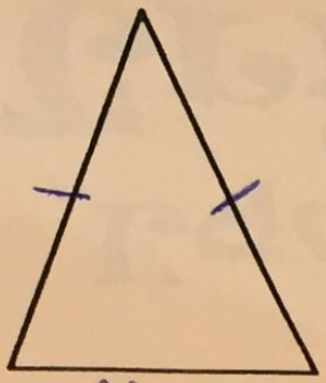
$x = 7$

$\frac{16}{4} = \frac{4}{4}x$ $x = 4$

Base Angles Theorem & its Converse

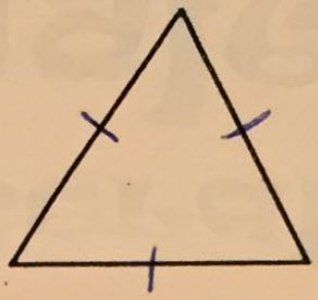
Corollary to the Base Angles Theorem

Isosceles

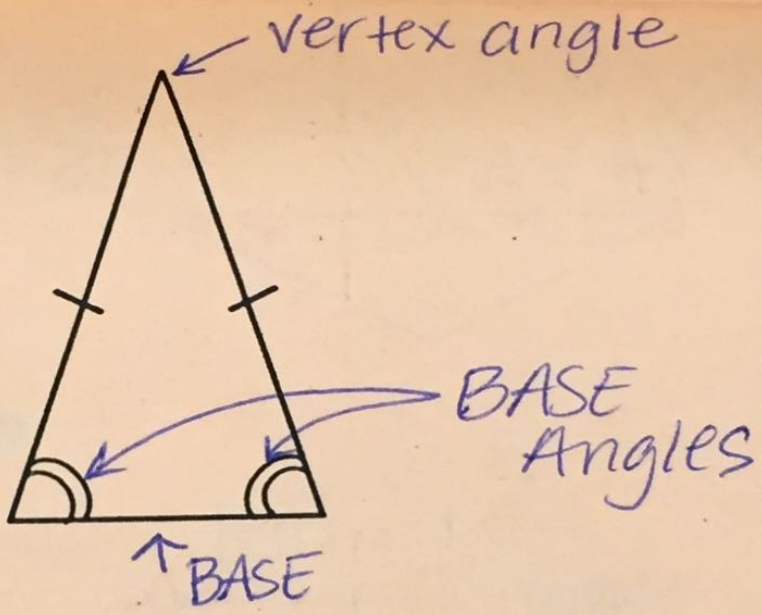


2 ≅ sides

Equilateral



3 ≅ sides



Vocabulary

$X = 7$

$\frac{16}{4} = \frac{4X}{4}$ $X = 4$

Base Angles Theorem & its Converse

Corollary to the Base Angles Theorem

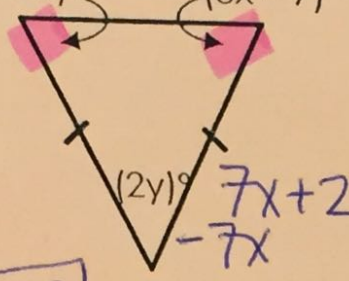
Base Angles Theorem:

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

**ANGLES

Find the values of x and y.

1



$7x+2=8x-7$

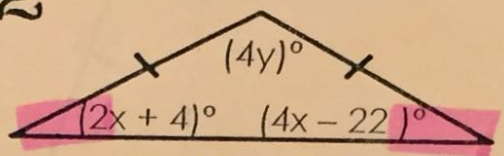
$-7x \quad -7x$

$2=x-7$

$+7 \quad +7$

$x=9$

2



$2x+4=4x-22$

$-2x \quad -2x$

$4=2x-22$

$+22 \quad +22$

$\frac{26}{2}=\frac{2x}{2}$

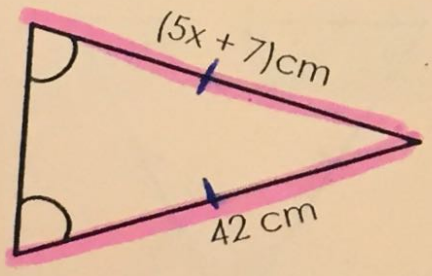
$x=13$

Converse of the Base Angles Theorem:

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

Find the value of x.

3



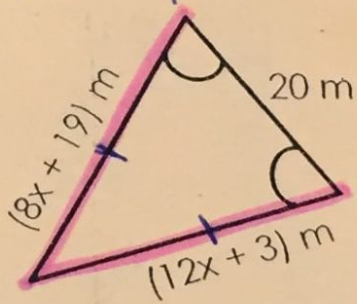
$5x+7=42$

$-7 \quad -7$

$\frac{5x}{5}=\frac{35}{5}$

$x=7$

4



$8x+19=12x+3$

$-8x \quad -8x$

$19=4x+3$

$-3 \quad -3$

$\frac{16}{4}=\frac{4x}{4}$

$x=4$

SIDES

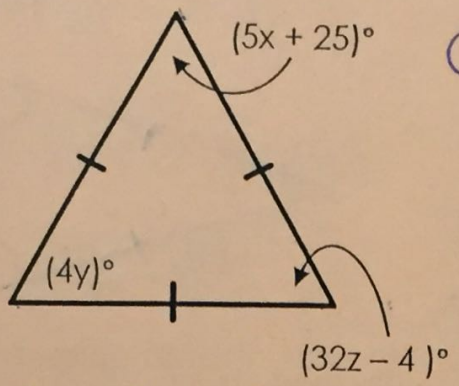
Base Angles Theorem & its Converse

Corollary to the Base Angles Theorem

Corollary to the Base Angles Theorem:

If a triangle is equilateral, then it is equiangular. all ∠ = 60°

5 Find the value of x, y, and z. angle = 60



① $5x+25=60$
$-25 \quad -25$
$\frac{5x}{5} = \frac{35}{5}$
$x=7$

② $32z-4=60$
$+4 \quad +4$
$\frac{32z}{32} = \frac{64}{32}$
$z=2$

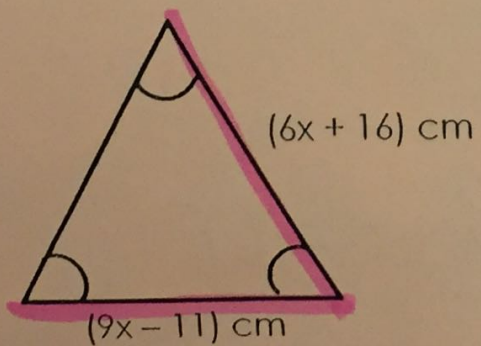
③ $\frac{4y}{4} = \frac{60}{4}$
$y=15$

ANGLES

Corollary to the Converse of the Base Angles Theorem:

If a triangle is equiangular, then it is equilateral.

6 Find the ~~perimeter~~ value of x of the triangle. part = part = part



$9x-11=6x+16$
$-6x \quad -6x$
$3x-11=16$
$+11 \quad +11$
$\frac{3x}{3} = \frac{27}{3}$
$x=9$

SIDES

Corollary to the Base Angles Theorem