4.1

TRIANGLE SUMS

Triangle sum theorem
Third angle postulate
Third angle theorem

Exterior Angle

Remote Interior Angles
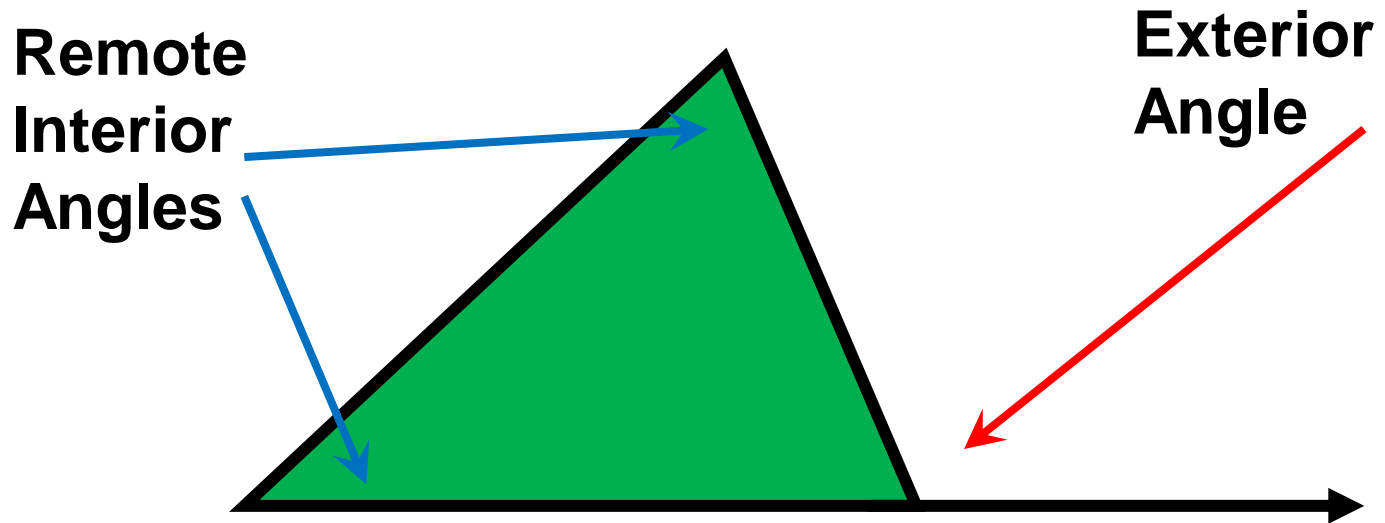
Exterior Angle

If you extend one side of a triangle from the vertex, you form an exterior angle.

Exploring...

What would you conjecture is the relationship between all the angles in a triangle?

_____

_____

_____.

What would you conjecture is the relationship between remote interior angles and the exterior angle in a triangle?

_____

_____

_____.

Given: Line l is parallel to the base of the triangle

Prove: $m\angle a + m\angle b + m\angle c = 180$

Statements	Reasons

Given: $\triangle ABC$ as shown

Prove: $m\angle 1 + m\angle 2 = m\angle 4$
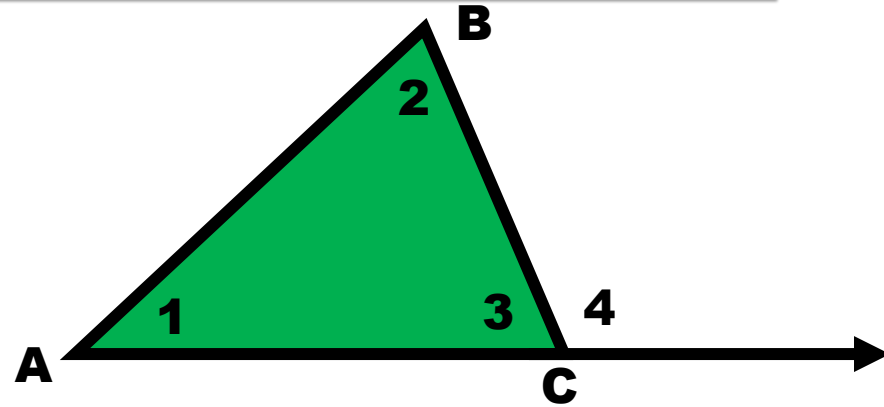
Statements	Reasons

Triangle Sum Theorem

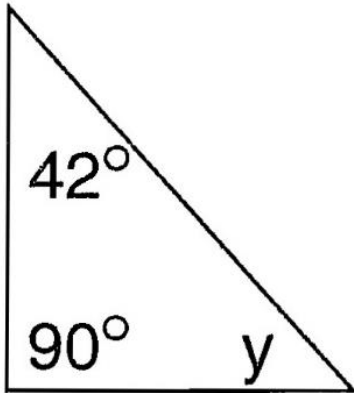**The ___ of all the _____ in a triangle is ____ _____ .**

Triangle Exterior Angle Theorem

The measure of an exterior angle of a triangle is _____ to the _____ of the _____ _____ _____ .
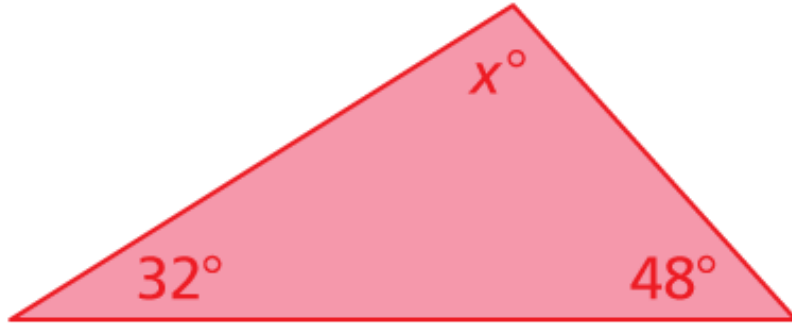
What do all the interior angles add up to in a triangle?
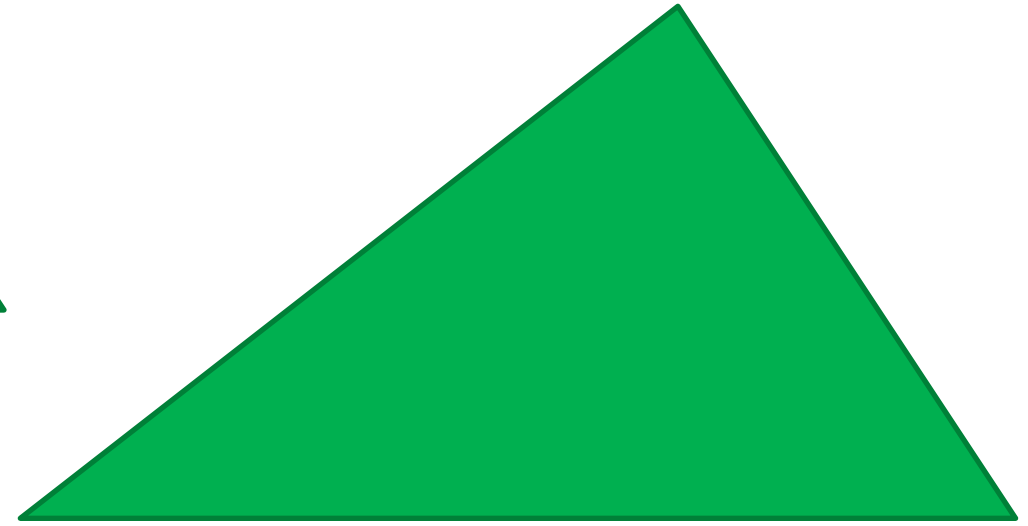
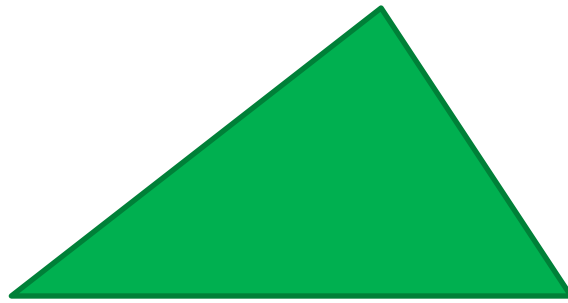**1) Find the missing angle algebraically.**

Putting it all together...

7) Find value of _x_ algebraically.

$x°$

$32°$ $48°$

Third Angle Theorem

POK

If _____ one triangle are congruent

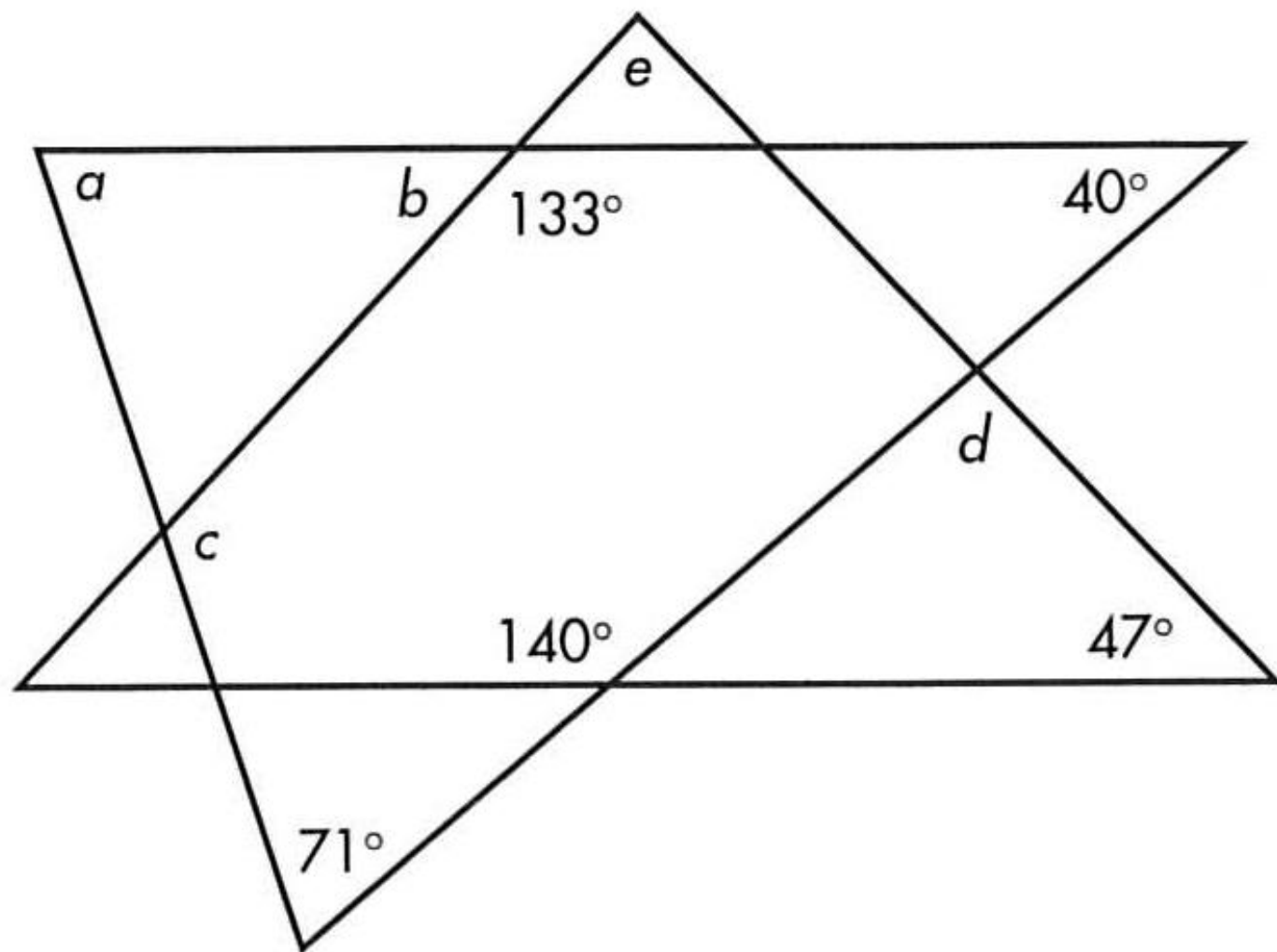to _____ in an other triangle, then

_____ .

7.* $a = -?-$

$b = -?-$

$c = -?-$

$d = -?-$

$e = -?-$

8. $m = $ -?-

$n = $ -?-

$p = $ -?-

$q = $ -?-

$r = $ -?-

$s = $ -?-

$t = $ -?-

$u = $ -?-

60°

112°

40°

70°

m

n

p

q

r

s

t

u