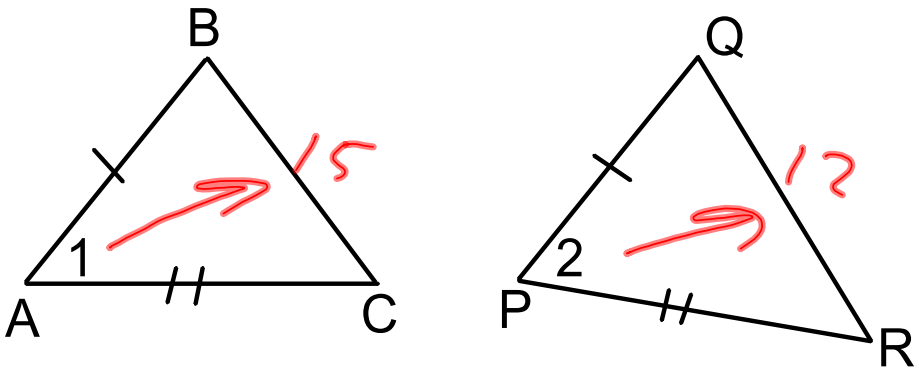
SSS Inequality

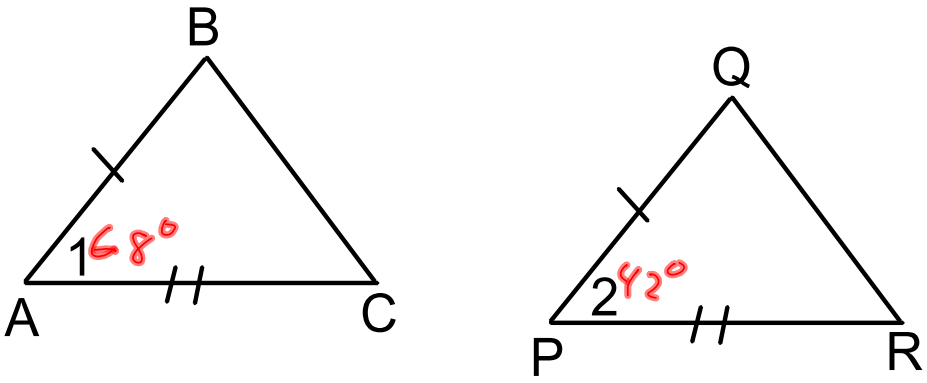
* If 2 sides of a triangle are congruent to 2 sides of another triangle and the third side in one triangle is longer than the third side side in the other triangle, then the angle between the pair of congruent sides in the first triangle is greater than the corresponding angle in the second triangle.



$\overline{AB} \cong \overline{PQ}$, $\overline{AC} \cong \overline{PR}$ and if $BC > QR$, then $m\angle 1 > m\angle 2$

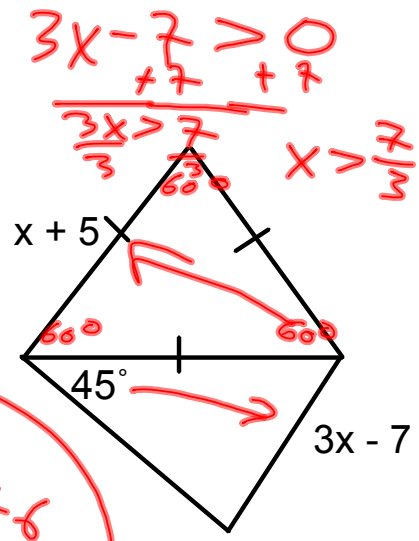
SAS Inequality (Hinge Theorem)

* If 2 sides of a triangle are ≅ to 2 sides of another triangle and the included angle in one triangle has a greater measure than the included angle in the other triangle, the 3rd side of the first triangle is longer than the 3rd side of the second triangle.



$\overline{AB} \cong \overline{PQ}$, $\overline{AC} \cong \overline{PR}$ and if $m\angle 1 > m\angle 2$, then BC > QR.

1. Write an inequality to describe the possible values of x.



$60^\circ > 45^\circ$

$x + 5 > 3x - 7$

$-x \quad -x$

$5 > 2x - 7$

$+7 \quad +7$

$12 > 2x$

$\frac{12}{2} > \frac{2x}{2}$

$6 > x$

or $x < 6$

$3x - 7 > 0$

$+7 \quad +7$

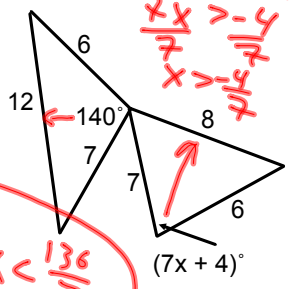
$3x > 7$

$\frac{3x}{3} > \frac{7}{3}$

$x > \frac{7}{3}$

$\frac{7}{3} < x < 6$

2. Write an inequality to describe the possible values of x.



$12 > 8$

$140 > 7x + 4$

$-4 \quad -4$

$136 > 7x$

$\frac{136}{7} > \frac{7x}{7}$

$\frac{136}{7} > x$

or $x < \frac{136}{7}$

$7x + 4 > 0$

$-4 \quad -4$

$7x > -4$

$\frac{7x}{7} > \frac{-4}{7}$

$x > -\frac{4}{7}$

$-\frac{4}{7} < x < \frac{136}{7}$