Review:

How many sides does a polygon with an interior angle sum of 4140 degrees have?

$\frac{4140}{180} = 23$ $23+2 = 25$ sides

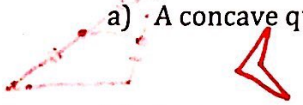
What is the measure of the exterior angle of a regular dodecagon?

12 sides $\frac{360}{12} = 30°$

What is the measure of each angle in a regular octagon? $6 \cdot 180 = 1080°$ $8\overline{)1080}$ $135°$

Draw a picture of the following:

a) A concave quadrilateral



b) A convex nonagon

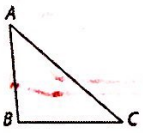
c) A regular quadrilateral

Angle Chasing Worksheet

Triangle Inequality Theorem

Triangle Inequality Theorem

The sum of any two side lengths of a triangle is greater than the third side length.



$AB + BC > AC$

$BC + AC > AB$

$AC + AB > BC$

Tell whether a triangle can have the following side lengths:

7, 10, 19

$17 < 19$ NO

2.3, 3.1, 4.6

$5.4 > 4.6$ Yes

12, 4, 17

$16 < 17$ NO

24, 8, 30

$32 > 30$ Yes

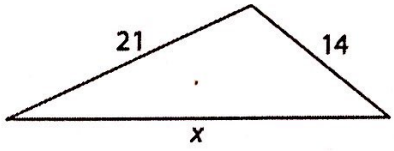
The lengths of two sides of a triangle are 8 inches and 13 inches. Find the range of possible lengths for the third side.

$5\text{in} < x < 21\text{in}$

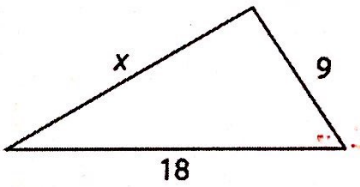
The lengths of two sides of a triangle are 22 inches and 17 inches. Find the range of possible lengths for the third side.

$5\text{in} < x < 39\text{in}$

Find the range of possible lengths for the third side of each triangle.

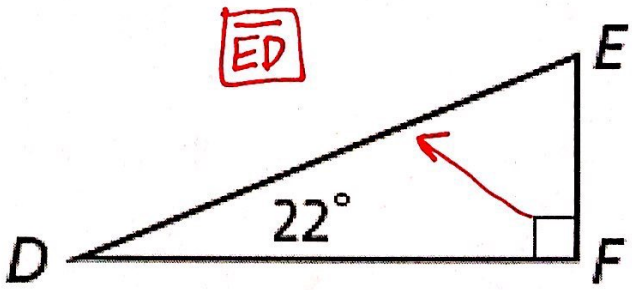


$7 < x < 35$

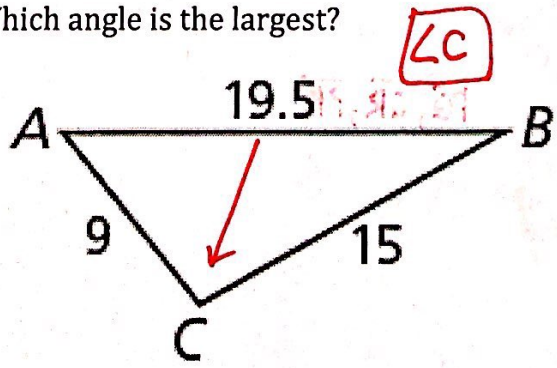


$9 < x < 27$

Which side is the longest?

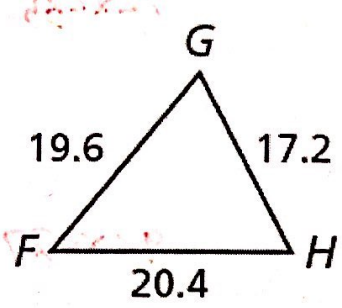


Which angle is the largest?



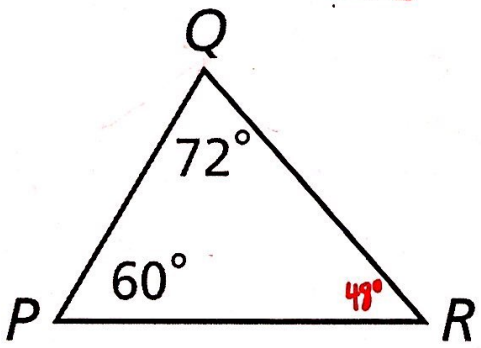
The largest angle is opposite the longest side in any given triangle.

Write the angles in order from smallest to largest.



∠F, ∠H, ∠G

Write the sides in order from shortest to longest.



PQ, QR, PR

Midsegments of Triangles

The **midsegment** of a triangle is a line segment that connects the midpoints of two sides of the triangle. Every triangle has three midsegments.

Triangle Midsegment Theorem

The segment joining the midpoints of two sides of a triangle is parallel to the third side, and its length is half the length of that side

In the figure, R and S are the midpoints of $\overline{QT}$ and $\overline{PT}$.

$\overline{RS}$ is parallel to $\overline{QP}$.

If $QP = 16$, then $RS =$ 8.

If $RS = 9$, then $QP =$ 18.