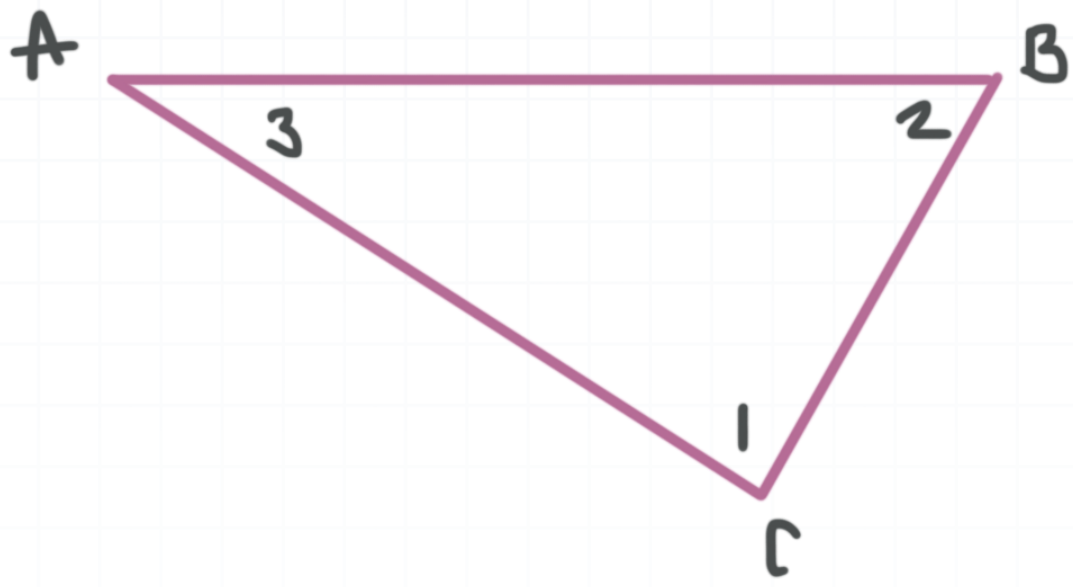
Topic: Naming simple geometric figures

Question: Which angles, in order, are the same as the angles $\angle BAC$, $\angle ACB$, $\angle CBA$?



Answer choices:

A $\angle 3, \angle 1, \angle 2$

B $\angle 2, \angle 3, \angle 1$

C $\angle 1, \angle 2, \angle 3$

D $\angle 3, \angle 2, \angle 1$

Solution: A

$\angle BAC$ is the angle in the upper-left part of the figure, and could also be named $\angle A$ or $\angle 3$.

$\angle ACB$ is the angle in the lower-right part of the figure, and could also be named $\angle C$ or $\angle 1$.

$\angle CBA$ is the angle in the upper-right part of the figure, and could also be named $\angle B$ or $\angle 2$.

Therefore, the answer is A.

Topic: Naming simple geometric figures

Question: Which pairs of segments, rays, or lines overlap?

I	Lines AB and CD
II	Rays BA and CD
III	Segments AC and BD

Answer choices:

A I and II

B II and III

C I and III

D Only I

Solution: C

I. $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are both lines, so they extend forever in both directions and will overlap on their entire length.

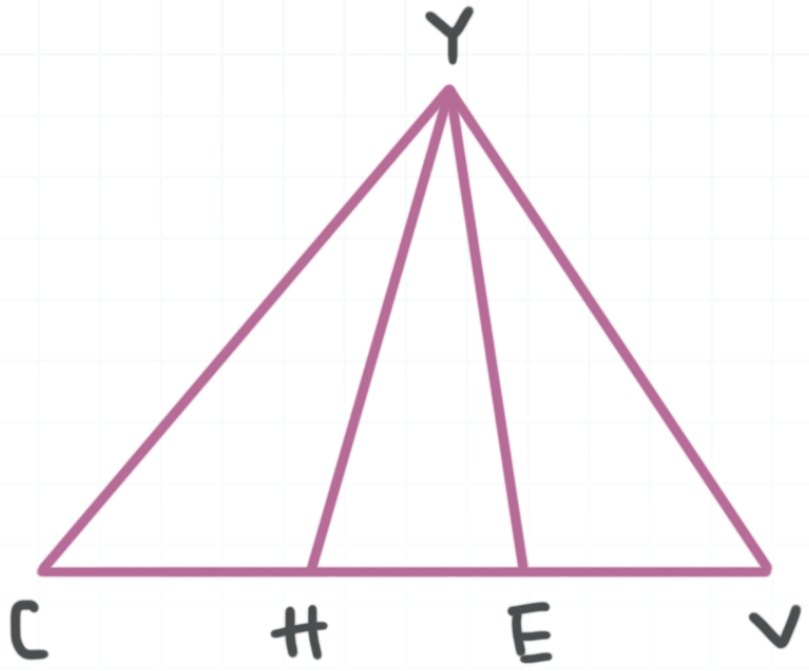
II. $\overrightarrow{BA}$ and $\overrightarrow{CD}$ are rays. $\overrightarrow{BA}$ starts at B and extends to the left through A, but $\overrightarrow{CD}$ starts at C and extends to the right through D. They don't overlap at all.

III. $\overline{AC}$ and $\overline{BD}$ are line segments. They overlap from B to C.

Therefore, both I and III have overlaps.

Topic: Naming simple geometric figures

Question: How many angles have their vertex at point Y?



Answer choices:

A 3

B 4

C 5

D 6

Solution: D

There are three small angles:

$$\angle CYH,\ \angle HYE,\ \angle EYV$$

Taking angles made of pairs of consecutive small angles gives two more angles:

$$\angle CYE,\ \angle HYV$$

There is only one angle made of three smaller angles:

$$\angle CYV$$

That makes a total of six angles with their vertex at Y.