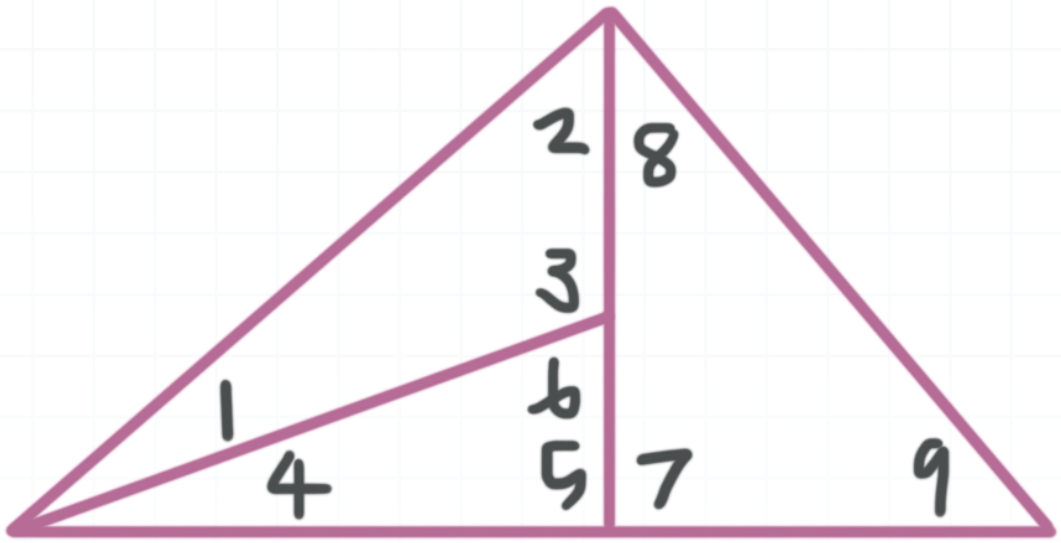
Topic: Adjacent and nonadjacent angles

Question: Which pair of angles are not adjacent angles?



Answer choices:

A $\angle 1, \angle 4$

B $\angle 2, \angle 3$

C $\angle 3, \angle 6$

D $\angle 5, \angle 7$

Solution: B

We'll first look for a pair of angles that don't have the same vertex. If we find that each of the given pairs of angles share a vertex, we'll to determine which pair have overlapping interiors.

The figure shows that $\angle 2$ and $\angle 3$ don't share a vertex, so they aren't adjacent angles.

Topic: Adjacent and nonadjacent angles

Question: Suppose a figure with several angles is drawn and there are five points on it (all different) labeled A, B, C, D, and E. The pairs of angles below are from that figure. Which pair of angles are definitely nonadjacent?

Hint: Without the figure, you can't tell for sure which angles *are* adjacent, but the letters in the names of the angles can tell you which pair are *not* adjacent.

Answer choices:

A $\angle BAE$, $\angle DAE$

B $\angle CED$, $\angle BEC$

C $\angle ACD$, $\angle BCA$

D $\angle BCE$, $\angle CBE$

Solution: D

When an angle is named with a sequence of three letters, the letter in the middle is always the vertex.

For example, looking at the angles from answer choice D:

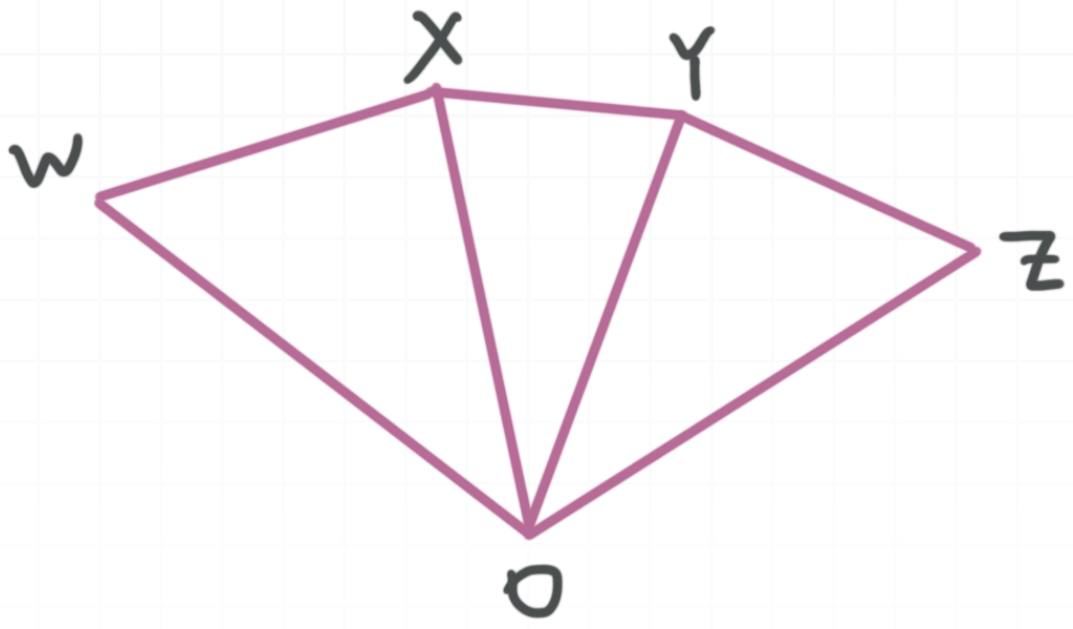
$\angle BCE$ has its vertex at C.

$\angle CBE$ has its vertex at B.

Since those angles don't share a vertex, they can't be adjacent.

Topic: Adjacent and nonadjacent angles

Question: Which pair of angles below are adjacent angles?



Answer choices:

A $\angle WOX, \angle WOY$

B $\angle ZYO, \angle ZYX$

C $\angle OYX, \angle ZYO$

D $\angle OWX, \angle OXW$

Solution: C

$\angle OYX$ and $\angle ZYO$ share a vertex, Y, and one side, $\overline{OY}$, and their interiors don't overlap.

That fits the definition of adjacent angles, so answer choice C is correct.

The angles in answer choice A have overlapping interiors, as do the angles in answer choice B, and the angles in answer choice D don't have the same vertex. Therefore, we can rule out answer choices A, B, and D.