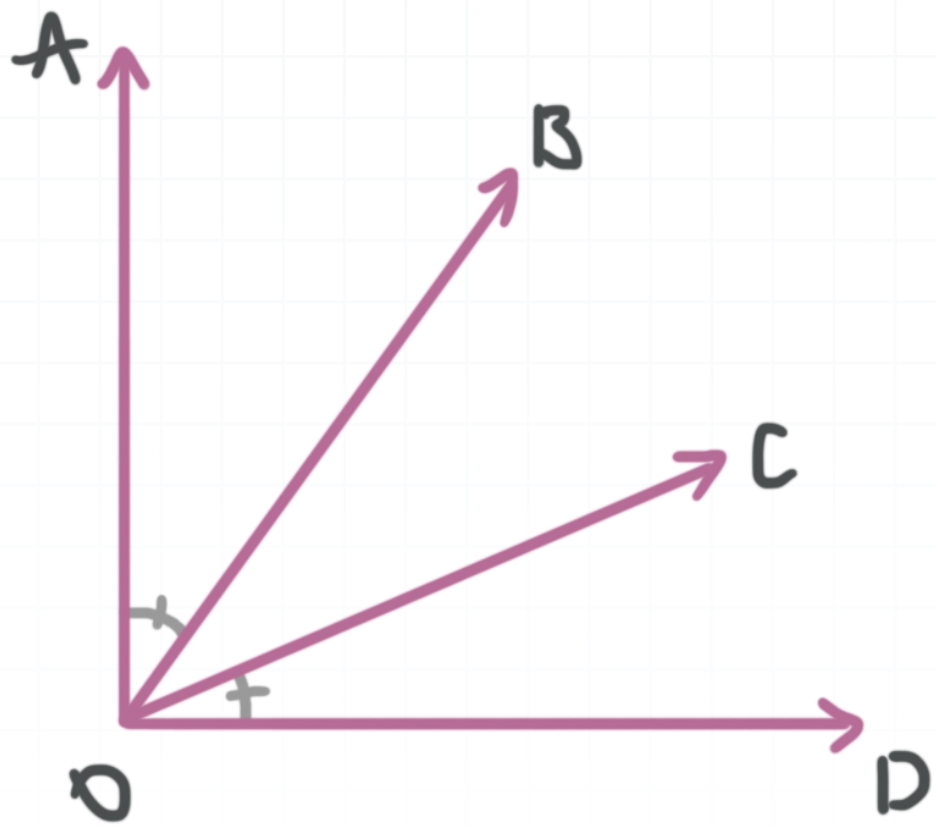
Topic: Measures of angles

Question: If $m\angle BOC = 37°$ and $m\angle AOD = 90°$, what is $m\angle AOC$?



Answer choices:

A $15°$

B $26.5°$

C $53°$

D $63.5°$

Solution: D

Let $x = m\angle AOB$. We also know that angle COD is congruent to angle AOB, so $x = m\angle COD$ as well.

We know that

$$m\angle AOB + m\angle BOC + m\angle COD = m\angle AOD$$

Substituting the expressions for the angle measures into this equation gives

$$x + 37^\circ + x = 90^\circ$$

$$2x + 37^\circ = 90^\circ$$

$$2x = 53^\circ$$

$$x = 26.5^\circ$$

Now we have enough to find $m\angle AOC$.

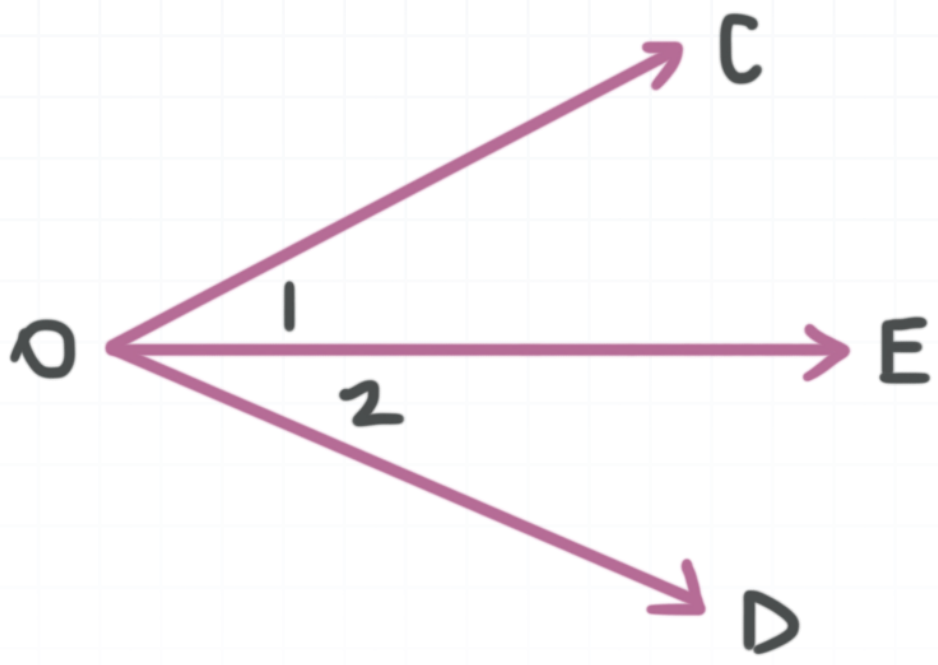
$$m\angle AOB + m\angle BOC = m\angle AOC$$

$$26.5^\circ + 37^\circ = m\angle AOC$$

$$63.5^\circ = m\angle AOC$$

Topic: Measures of angles

Question: If $m\angle 1 = 4x$, $m\angle 2 = 2x$, and $m\angle COD = 5x + 9°$, where x is in degrees, what is $m\angle 1$?



Answer choices:

A $9°$

B $18°$

C $27°$

D $36°$

Solution: D

We see that

$$m\angle 1 + m\angle 2 = m\angle COD$$

Substituting the expressions for the angle measures into this equation gives

$$4x + 2x = 5x + 9^\circ$$

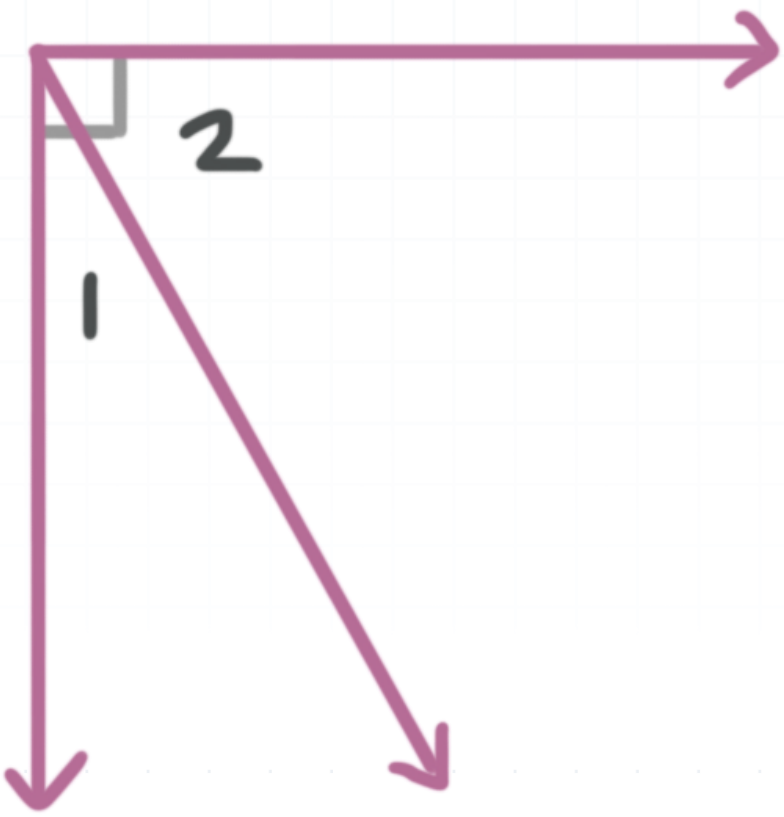
$$6x = 5x + 9^\circ$$

$$x = 9^\circ$$

$$m\angle 1 = 4x = 4(9^\circ) = 36^\circ$$

Topic: Measures of angles

Question: If $m\angle 1 = x + 2^\circ$ and $m\angle 2 = 3x$, where x is in degrees, what is $m\angle 2$? Hint: A little square at the vertex of an angle indicates that the measure of that angle is 90°. We call these "right-angles," and the rays that form a right angle are perpendicular to each other.



Answer choices:

A 22°

B 24°

C 66°

D 88°

Solution: C

We see that

$$m\angle 1 + m\angle 2 = 90^\circ$$

Substituting the expressions for the angle measures into this equation gives

$$x + 2^\circ + 3x = 90^\circ$$

$$4x + 2^\circ = 90^\circ$$

$$4x = 88^\circ$$

$$x = 22^\circ$$

Which means that $m\angle 2$ must be

$$m\angle 2 = 3(22^\circ)$$

$$m\angle 2 = 66^\circ$$