

# Negative Angles

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or press the enter key

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We've seen what happens when we generate angles by rotating the initial side counter clockwise.

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What happens when we rotate the initial sides clockwise?

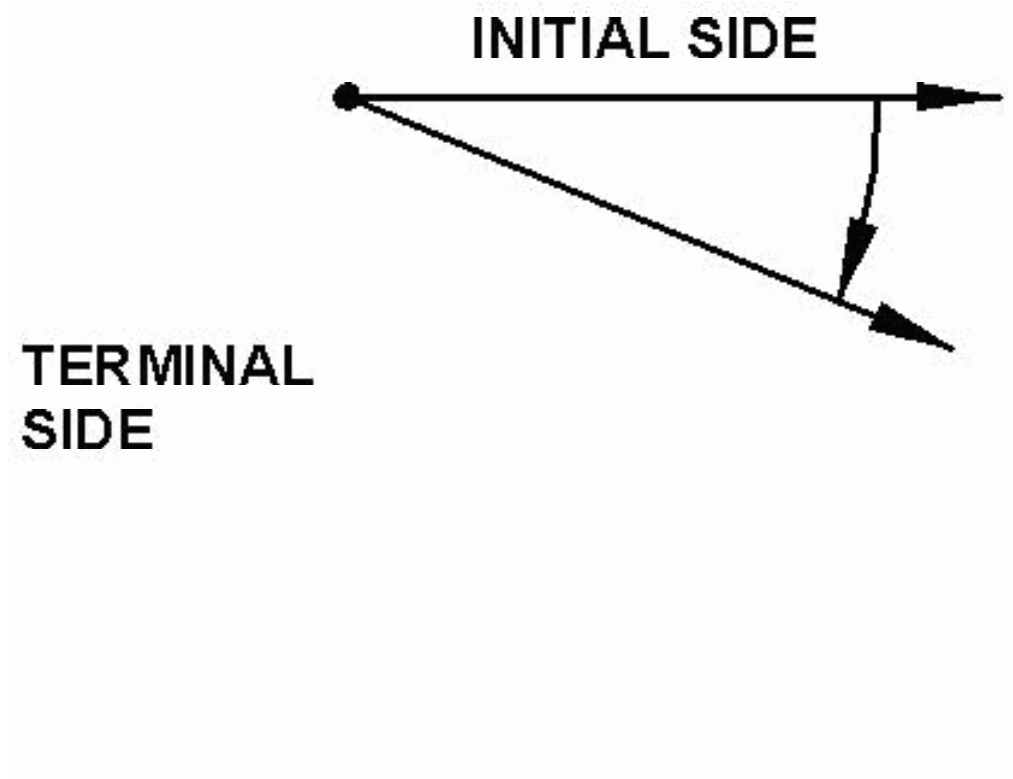
Answer – We consider the angles to be negative!

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Example – Let's rotate the initial side clockwise  $\frac{1}{4}$  revolution.

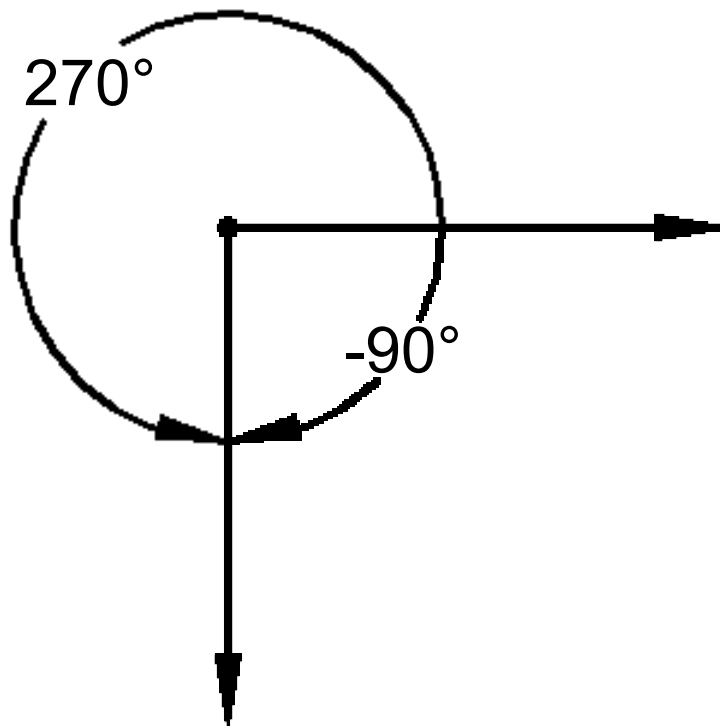


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Note:  $-90^\circ$  and  $270^\circ$  are coterminal!



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Recall:  $\alpha = \theta + 360^\circ n$

$$-90 = 270 + 360 (-1)$$

$$-90 = 270 - 360$$

$$-90 = -90$$

Or

$$270 = -90 + 360 (1)$$

$$270 = -90 + 360$$

$$270 = 270$$

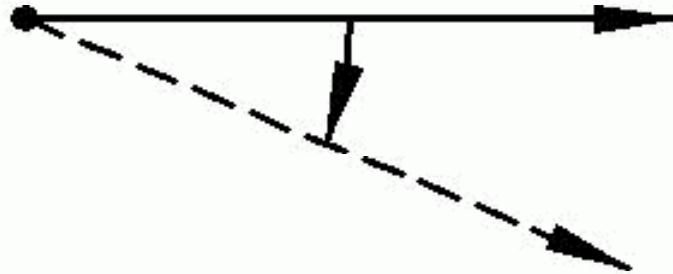
What does an angle of  $-135^\circ$  look like?

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Answer – First rotate  $\frac{1}{4}$  revolution clockwise, then rotate  $\frac{1}{8}$  revolution clockwise.



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What does an angle of  $-210^\circ$  look like?



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# End of Negative Angles

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