

EXERCISES FOR APPENDIX: ANGLES IN DEGREES

Question 1 In Exercises ?? - ??, convert the angles into the DMS system. Round each of your answers to the nearest second.

Problem 1.1 63.75°

$63^\circ 45'$

Problem 1.2 $200.325^\circ = 200 \text{ degrees } (^\circ) 19 \text{ minutes } (') 30 \text{ seconds } (')$

Problem 1.3 -317.06°

$-317^\circ 3' 36''$

Problem 1.4 $179.999^\circ = 179 \text{ degrees } (^\circ) 59 \text{ minutes } (') 56 \text{ seconds } (')$

Question 2 In Exercises ?? - ??, convert the angles into decimal degrees. Round each of your answers to three decimal places.

Problem 2.1 $125^\circ 50'$

125.833°

Problem 2.2 $-32^\circ 10' 12'' = -32.170 \text{ degrees } (^\circ)$

Problem 2.3 $502^\circ 35'$

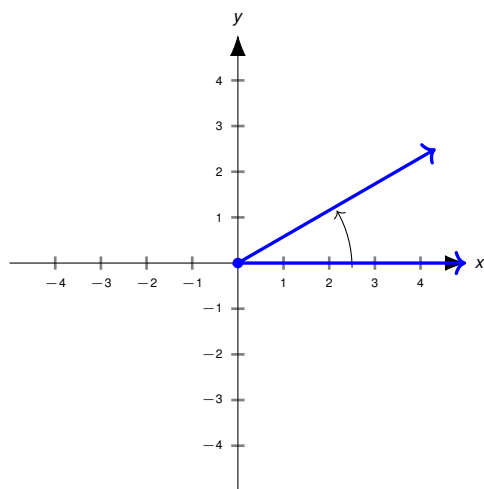
502.583°

Problem 2.4 $237^\circ 58' 43'' = 237.979 \text{ degrees } (^\circ)$

Question 3 In Exercises ?? - ??, graph the oriented angle in standard position. Classify each angle according to where its terminal side lies and then give two coterminal angles, one of which is positive and the other negative.

Problem 3.1 30°

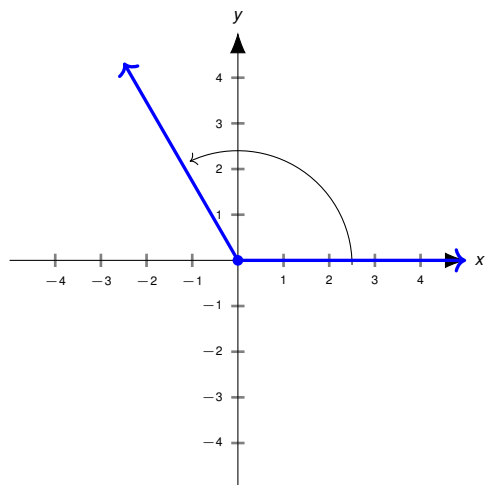
30° is a Quadrant I angle which is coterminal with 390° and -330°



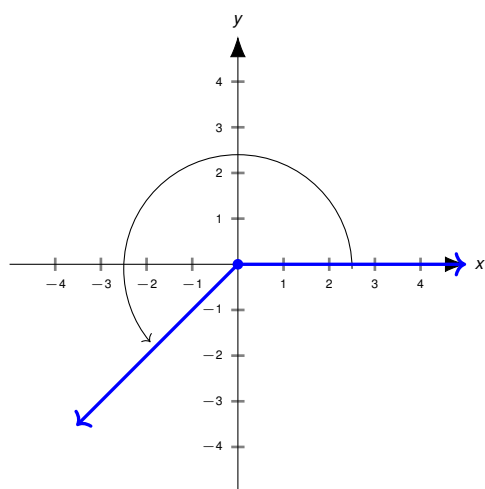
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Problem 3.2 120°

120° is a Quadrant II angle which is coterminal with 480° and -240°

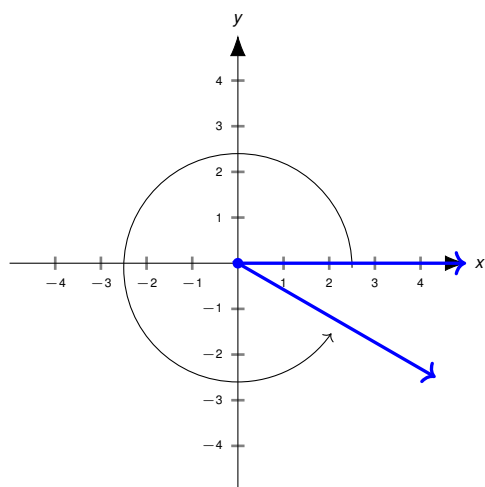
**Problem 3.3** 225°

225° is a Quadrant III angle which is coterminal with 585° and -135°

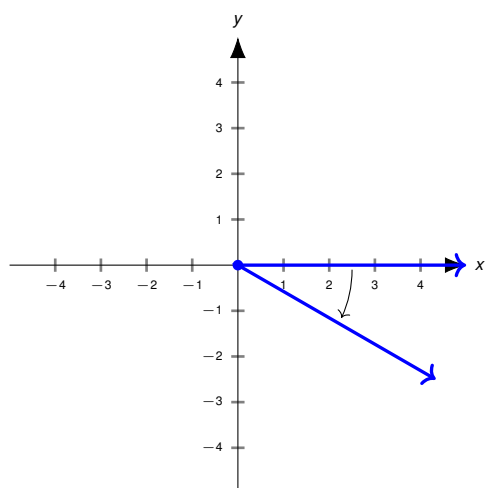
**Problem 3.4** 330°

330° is a Quadrant IV angle which is coterminal with 690° and -30°

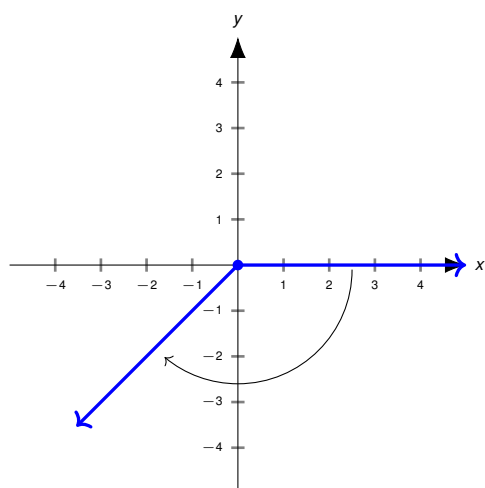
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**Problem 3.5** -30°

-30° is a Quadrant IV angle which is coterminal with 330° and -390°

**Problem 3.6** -135°

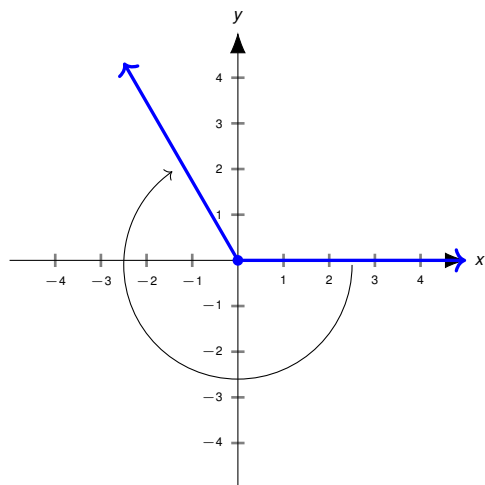
-135° is a Quadrant III angle which is coterminal with 225° and -495°



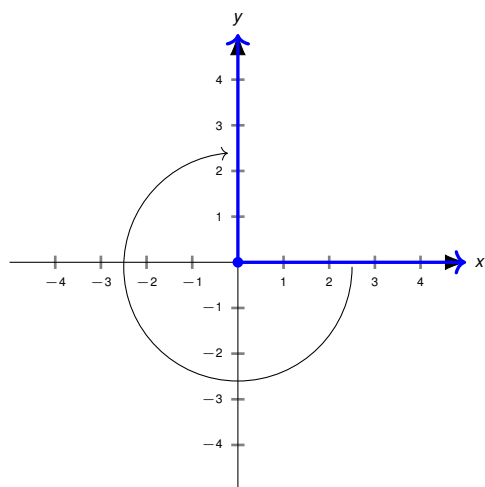
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Problem 3.7 -240°

-240° is a Quadrant II angle which is coterminal with 120° and -600°

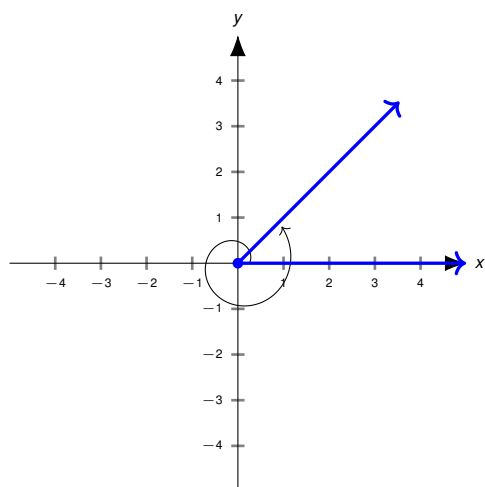
**Problem 3.8** -270°

-270° is a quadrantal angle which is coterminal with 90° and -630°

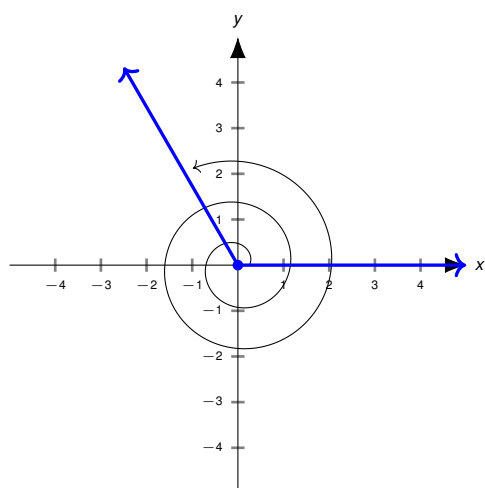
**Problem 3.9** 405°

405° is a Quadrant I angle which is coterminal with 45° and -315°

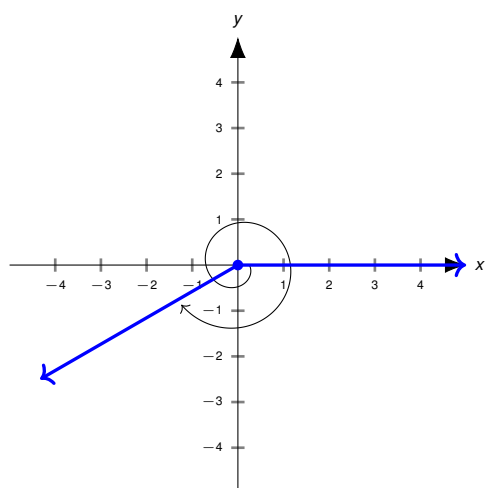
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**Problem 3.10** 840°

840° is a Quadrant II angle which is coterminal with 120° and -240°

**Problem 3.11** -510°

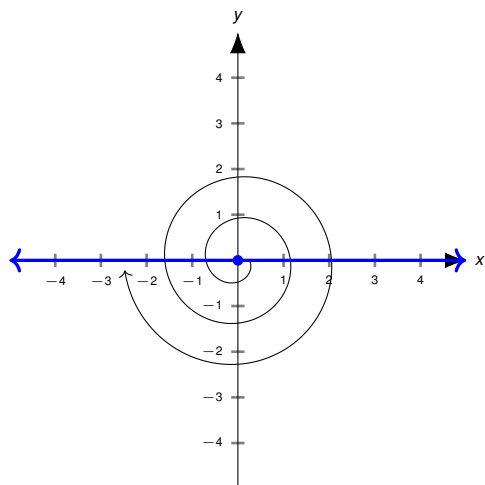
-510° is a Quadrant III angle which is coterminal with -150° and 210°



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Problem 3.12 -900°

-900° is a quadrantal angle which is coterminal with -180° and 180°



Problem 4 With help from your classmates, explain why if (x, y) is a point on the terminal side of an angle α in standard position, then so is $(r x, r y)$ for any number $r > 0$. What happens if $r < 0$?