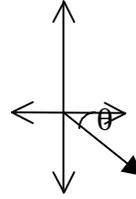
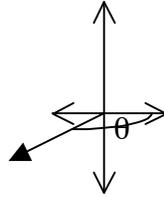
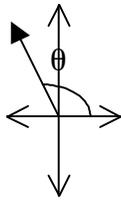


REFERENCE ANGLES

A reference angle is the acute angle formed by the terminal side of a given angle, θ , and the nearest portion of the x-axis.



For each of the following angles, determine which quadrant it is and find the reference angle.

ANGLE	QUADRANT	REFERENCE ANGLE
170°		
250°		
92°		
8°		
358°		
420°		
-190°		
$5\pi / 12$		
$15\pi / 8$		
$11\pi / 10$		
$-3\pi / 4$		
$11\pi / 6$		
3		
4		
5		

For each of the following, find 4 angles, one in each quadrant, having the given angle as a reference angle.

20°

87°

$\pi / 12$

$3\pi / 8$

1

α

For each of the following, find 4 angles, one in each quadrant, having the given angle as a reference angle and sketch the location of all four on one set of axes.

30°	$\pi / 6$
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45°	$\pi / 4$
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60°	$\pi / 3$
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Name a " $\pi/6$ type" angle in quadrant II

Name a " 60° type" angle in quadrant IV

Name a " $\pi/4$ type" angle in quadrant III

Name a " 30° type" angle in quadrant II