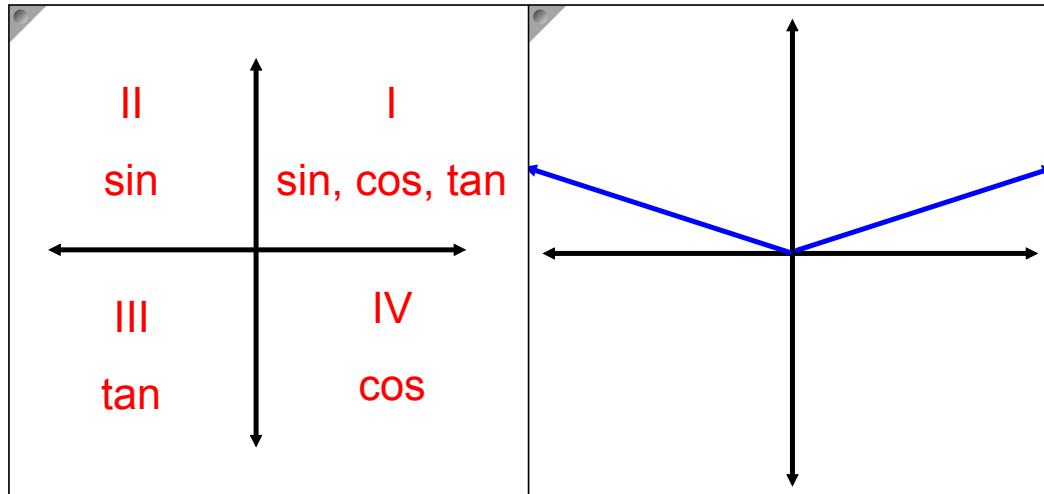


Circle Trig #1: Reference Angle

Warm up:

1. Draw the coordinate plane and label the quadrants. In each quadrant list the Trig functions that are positive.
2. Calculate $\sin 30^\circ$ and $\sin 150^\circ$. What do you notice? Explain why this occurs.



Objective: To convert angles measured on the unit circle into angles with congruent trig. values.

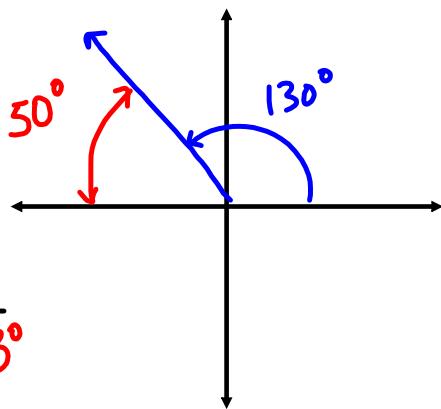
Definition: Reference Angle - the positive acute angle formed by the terminal side of θ , and the x-axis.

(how far away is θ from the x-axis?)

ex) Find the reference angle for ...

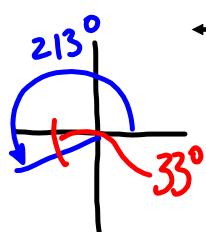
1) 130°

50°



2) 213°

33°



you do ...

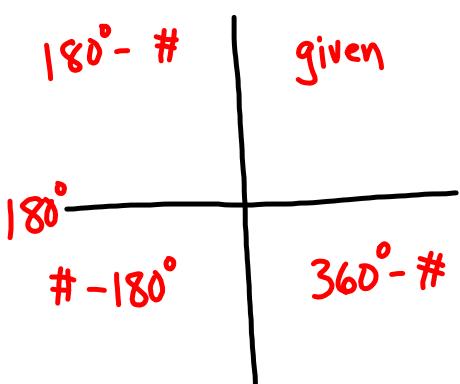
a) 174°

6°

b) 295°

65°

How far (degrees) is the given angle
from the x-axis?



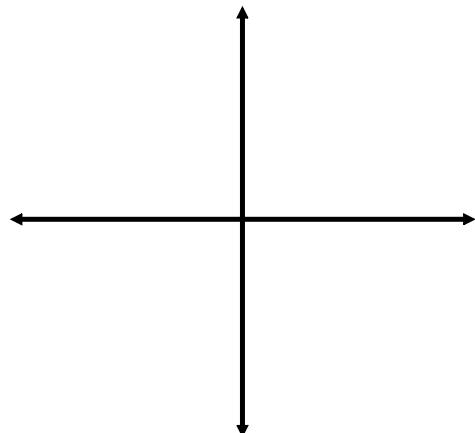
~more~

how to calculate the
reference angle

ex 3) 685°

35°

Subtract 360° until
you are within the
unit circle



you do) -948°

48°

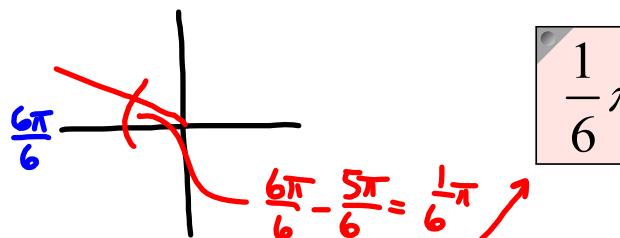
This time, add 360°
until you are within
the unit circle



~more~

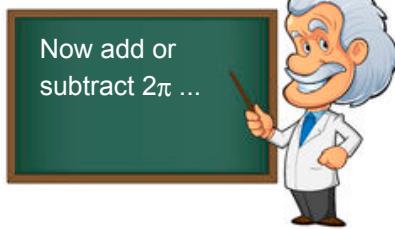
Same, but in radians ...

ex 4) $\frac{5}{6}\pi$



$$\frac{1}{6}\pi$$

ex 5) $\frac{10}{3}\pi$



$$\frac{1}{3}\pi$$

you do: $\frac{11}{4}\pi$

$$\frac{1}{4}\pi$$

~more~

~end~