

4-28-14

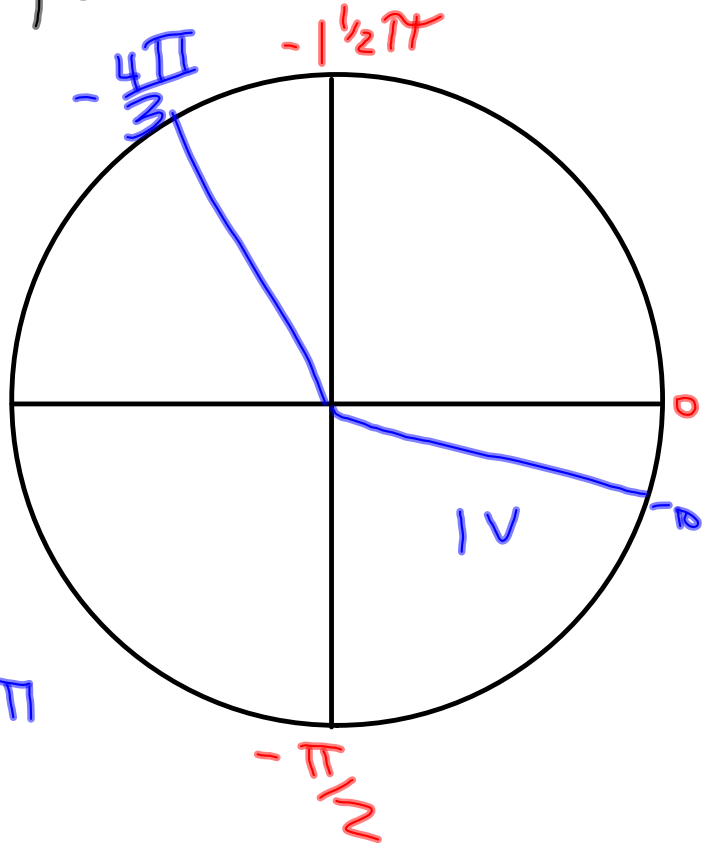
3<sup>rd</sup> Trig

In which quadrant are

①  $-10^\circ$  IV

②  $-\frac{4\pi}{3}$  II  $-\pi$   
 $-\frac{1}{3}\pi$

③  $\frac{13\pi}{5} = 2\frac{3}{5}\pi$   
II

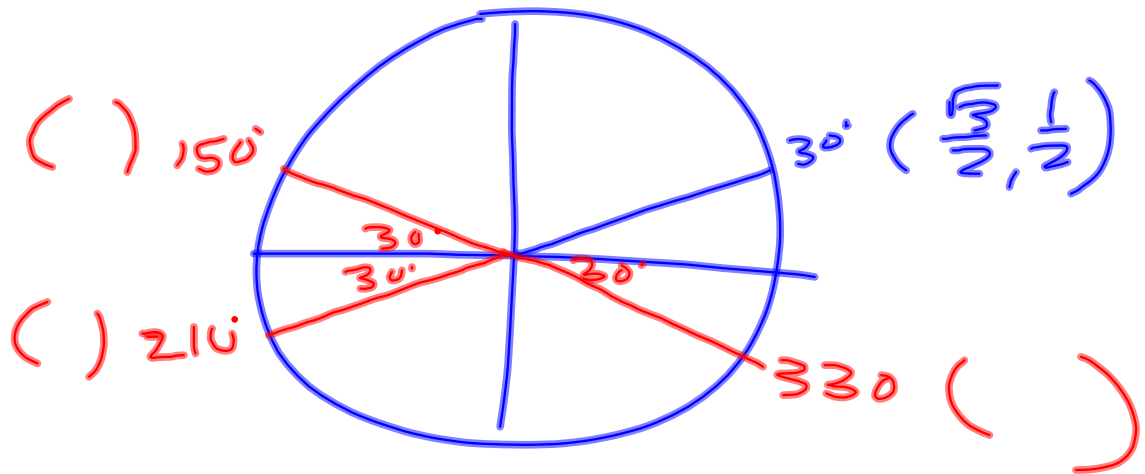


5 questions - Coterminal

④  $\frac{\pi}{5}$  and  $\frac{7\pi}{5}$   $\frac{7\pi}{5} - \frac{\pi}{5} = \frac{6\pi}{5}$   
No  $1.2\pi$

⑤  $280^\circ$  and  $360^\circ$   
80<sup>o</sup> difference No

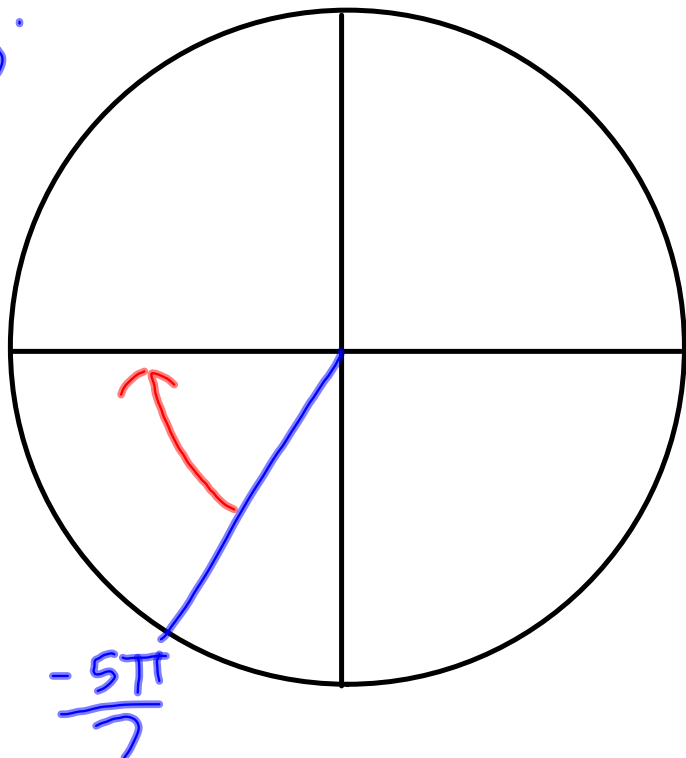
# Reference Angle



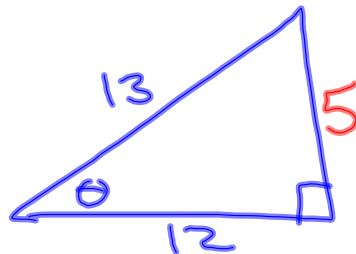
Give reference angle for these:

⑥  $150^\circ \rightarrow 30^\circ$

⑦  $-\frac{5\pi}{7}$   
 $\frac{2\pi}{7}$



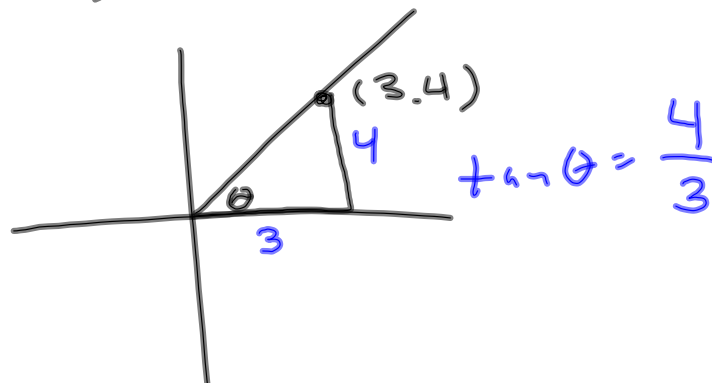
⑧ When  $\cos \theta = \frac{12}{13}$ , <sup>adj</sup> what is  $\tan \theta = \frac{5}{12}$  <sup>hyp</sup>



$$12^2 + b^2 = 13^2$$

$$b = 5$$

⑨ What is the  $\tan \theta$  if the initial side of the angle is on the x-axis ( $0^\circ$ ) and the terminal side goes through (3,4).



$$\tan \theta = \frac{4}{3}$$

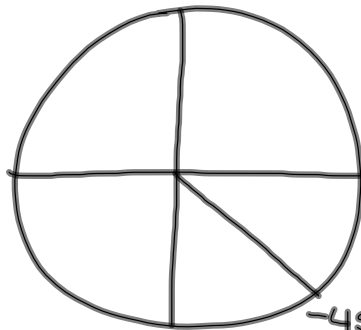
⑩ What is the radian measurement for  $240^\circ$ ?

$$\frac{240^\circ}{1} \cdot \frac{\pi}{180^\circ} = \frac{4\pi}{3}$$

⑪ On a unit circle, what point is located at  $45^\circ$ ?

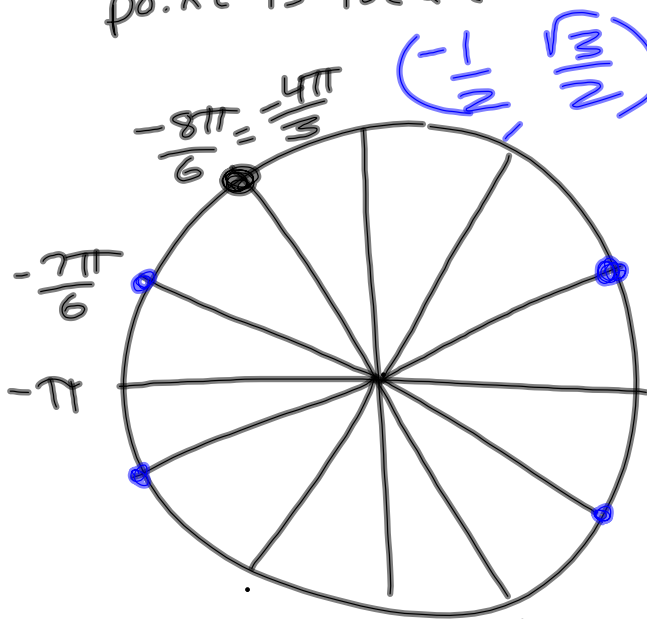
$$\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$$

⑫ On a unit circle, what point is located at  $45^\circ$ ?

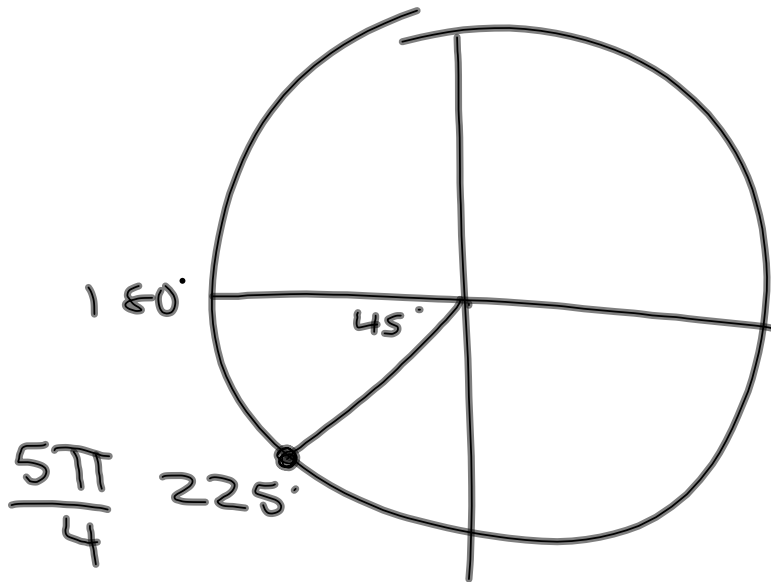


$$-45^\circ \left(\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$$

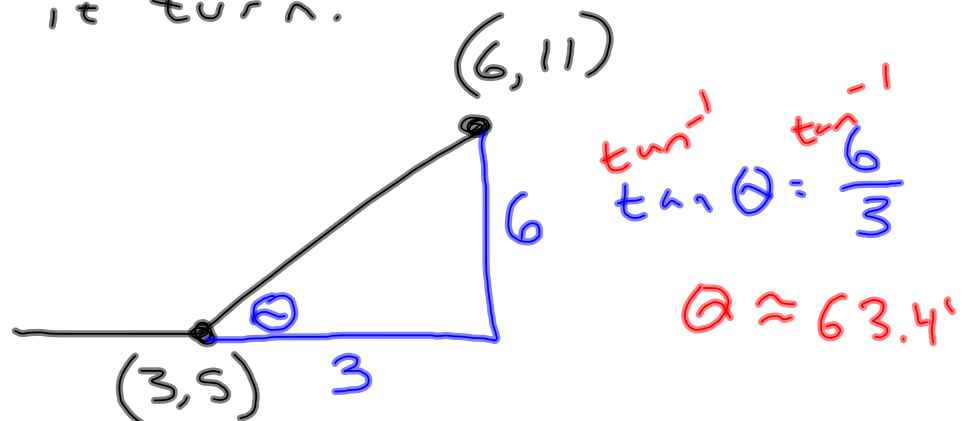
⑬ On a unit circle, what point is located at  $-\frac{4\pi}{3}$ ?



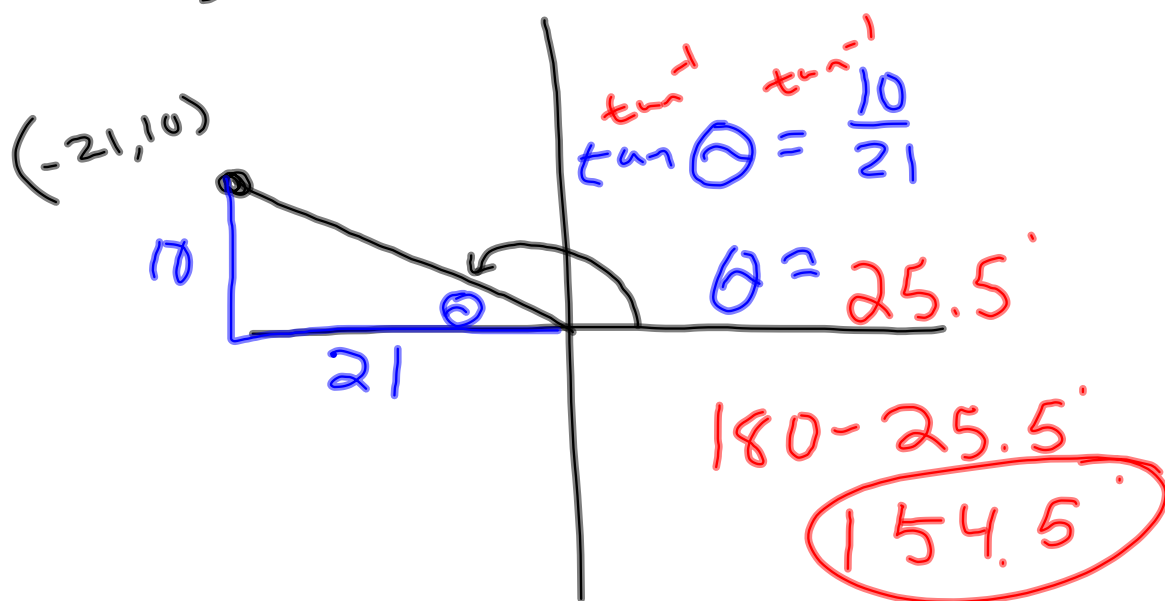
$$\left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$$



A plane is flying due East and is located at  $(3, 5)$ . It must turn North and head to  $(6, 11)$ . How many degrees must it turn?



What angle is formed with the x-axis in the 1<sup>st</sup> quadrant if the angle opens counterclockwise and goes through  $(-21, 10)$ ?



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4<sup>th</sup> Trig

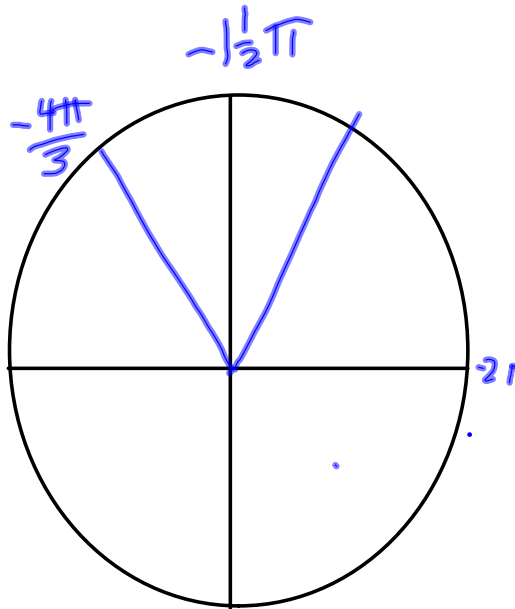
In which quadrant are

①  $-10^\circ$  IV

②  $-\frac{4\pi}{3} = -\frac{1}{3}\pi$   
II  $\rightarrow \pi$

③  $\frac{12\pi}{5}$  I

$2\frac{2}{5}\pi$   
Find  $\frac{2\pi}{5}$   
( $.4\pi$ )

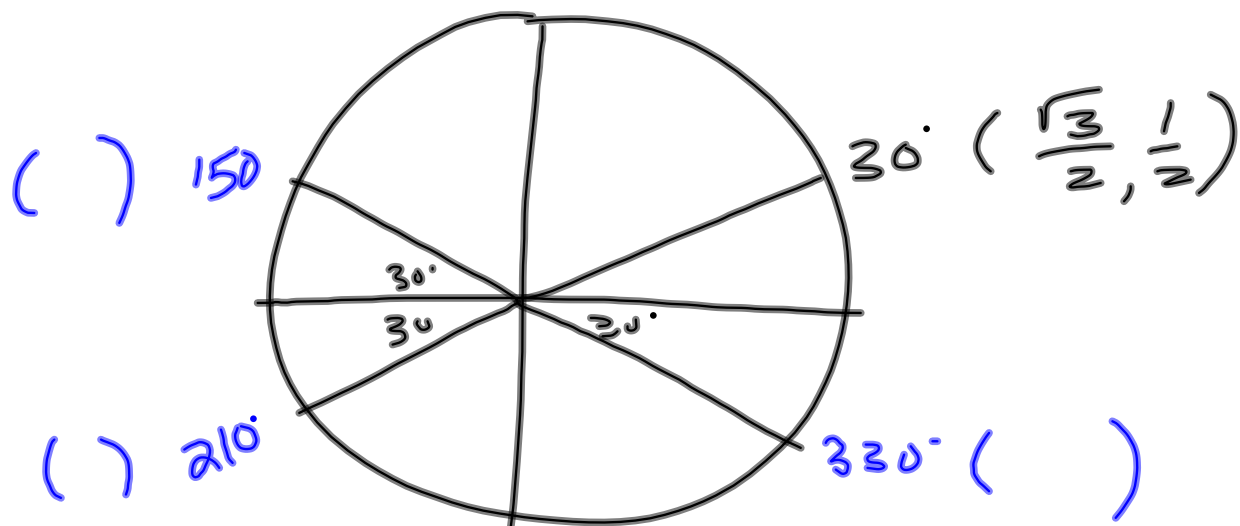


Coterminal

④ Are  $280^\circ$  and  $660^\circ$  coterminal?  
 $660 - 280 = 380^\circ$   
No

⑤ Are  $-40^\circ$  and  $320^\circ$  coterminal?  
 $320 - (-40) = 360^\circ$   
Yes!

# Reference Angles

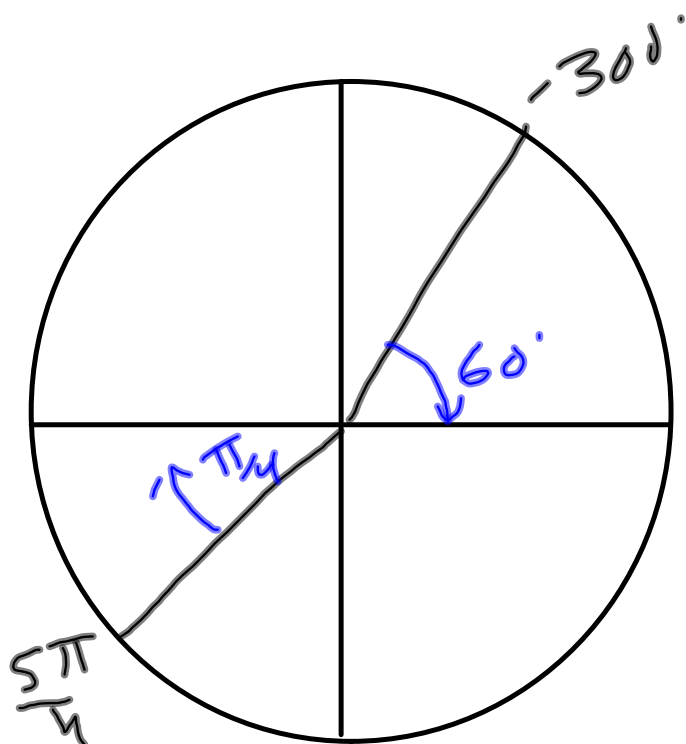


What is the reference angle for:

⑥  $\frac{5\pi}{4}$

$\frac{\pi}{4}$

⑦  $-300^\circ$

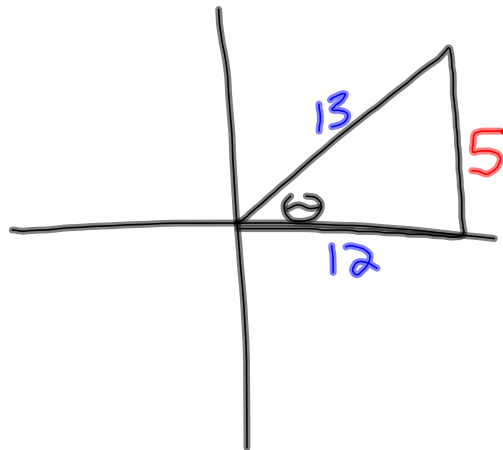




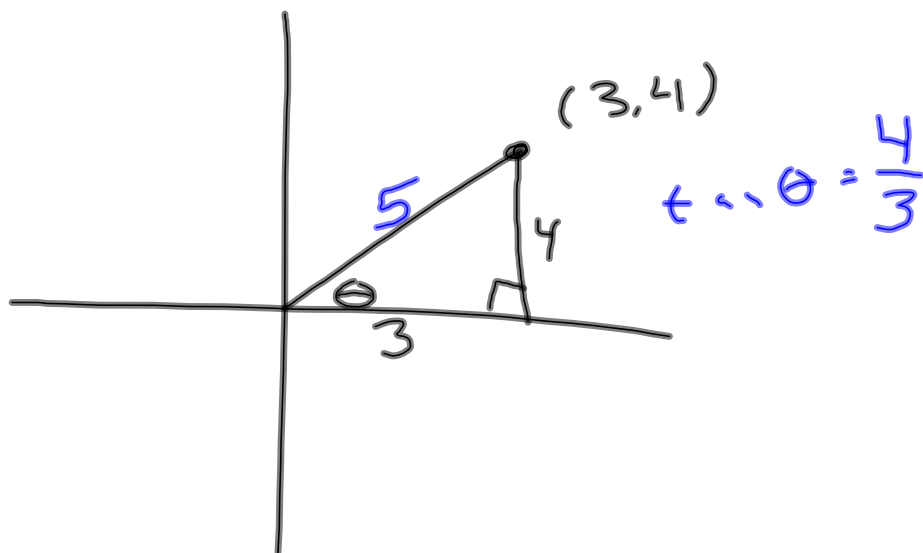
⑧ When  $\cos \theta = \frac{12}{13}$  <sup>adj.</sup> What  
 is  $\tan \theta = \frac{5}{12}$ ? <sub>hyp</sub>

$$12^2 + b^2 = 13^2$$

$$b = 5$$



⑨ What is  $\tan \theta$  if the initial side of the angle is on the x-axis ( $0^\circ$ ) and terminal side goes through the point  $(3, 4)$ ?

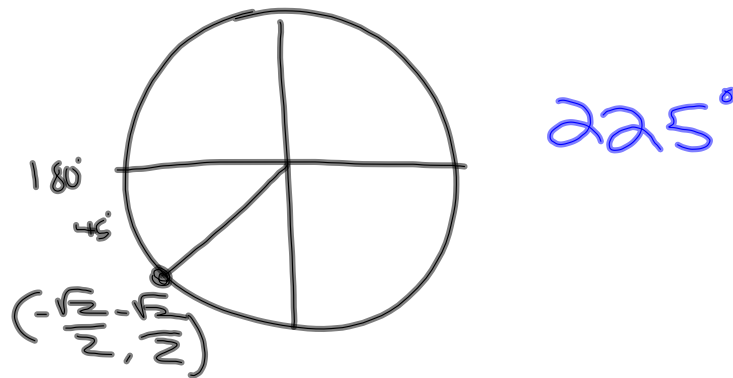


$$\tan \theta = \frac{4}{3}$$

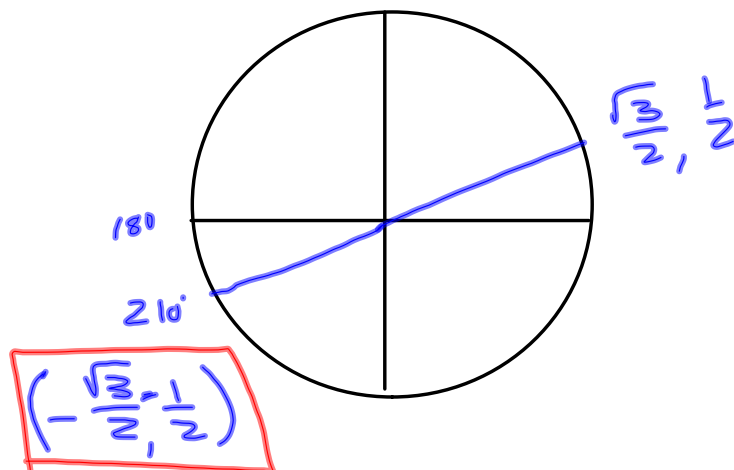
What is  $\frac{\pi}{50}$  in degrees?

$$\frac{\cancel{\pi}}{50} \cdot \frac{180}{\cancel{\pi}} = 3.6^\circ$$

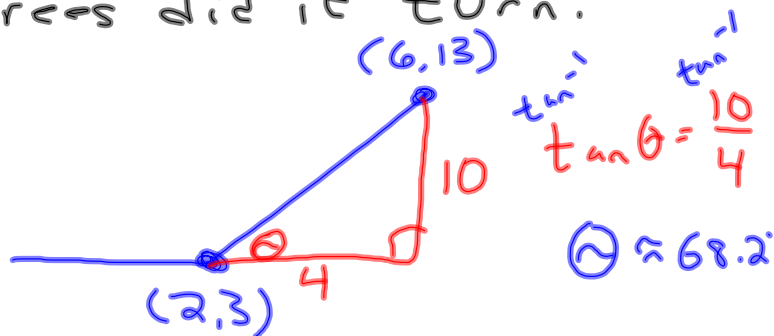
What degree measurement is located at  $(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$ ?



What is point location of  $210^\circ$ ?



A plane is flying East and is located at  $(2, 3)$ . It turns North and goes to  $(6, 13)$ . How many degrees did it turn?



What angle is formed w/ the x-axis in the 1<sup>st</sup> quad if the angle opens counterclockwise and goes through the point  $(-24, 8)$ ?

