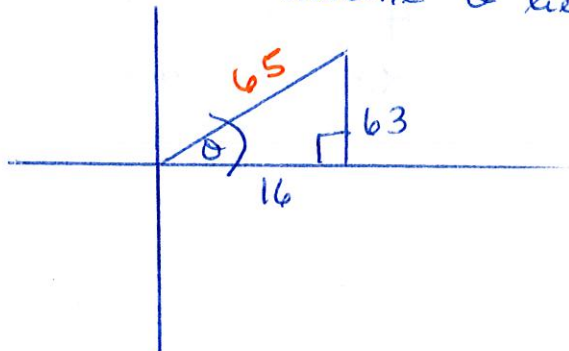


Quiz Review Right Triangle Trig

For each problem, find all 6 trig functions.

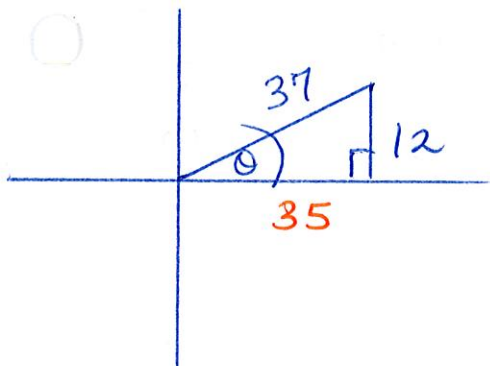
1.  $\cot \theta = \frac{16}{63}$

The value is positive; there are no constraints. We can assume  $\theta$  lies in Q1. (i.e. all values are positive)



$\sin \theta = \frac{63}{65}$	$\csc \theta = \frac{65}{63}$
$\cos \theta = \frac{16}{65}$	$\sec \theta = \frac{65}{16}$
$\tan \theta = \frac{63}{16}$	$\cot \theta = \frac{16}{63}$

2.  $\csc \theta = \frac{37}{12}$

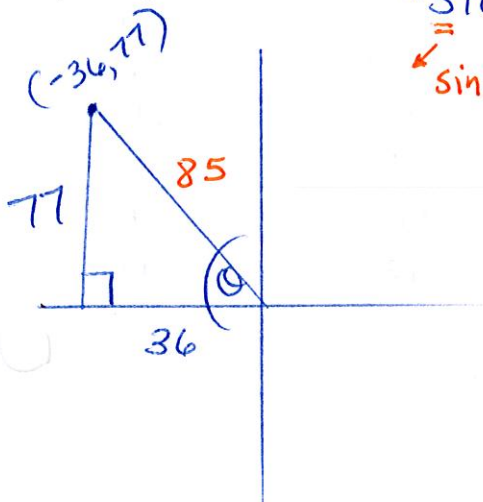


$\sin \theta = \frac{12}{37}$	$\csc \theta = \frac{37}{12}$
$\cos \theta = \frac{35}{37}$	$\sec \theta = \frac{37}{35}$
$\tan \theta = \frac{12}{35}$	$\cot \theta = \frac{35}{12}$

3.  $(-36, 77)$

this point lies in Q2 where "STUDY"

← sine + csc are positive



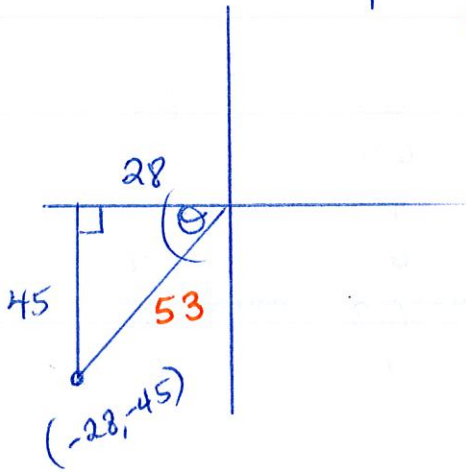
$\sin \theta = \frac{77}{85}$	$\csc \theta = \frac{85}{77}$
$\cos \theta = -\frac{36}{85}$	$\sec \theta = -\frac{85}{36}$
$\tan \theta = -\frac{77}{36}$	$\cot \theta = -\frac{36}{77}$

4. (-28, -45)

This point lies in Q3 where

"Trig"

tan + cot are positive

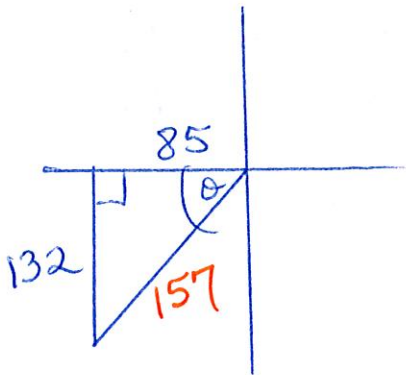


$\sin \theta = -\frac{45}{53}$	$\csc \theta = -\frac{53}{45}$
$\cos \theta = -\frac{28}{53}$	$\sec \theta = -\frac{53}{28}$
$\tan \theta = \frac{45}{28}$	$\cot \theta = \frac{28}{45}$

5.  $\tan \theta = \frac{132}{85}$ , and  $\csc \theta < 0$ .

Since csc is negative, we must eliminate Q1.

Since tan is positive,  $\theta$  might lie in Q1 or Q3.

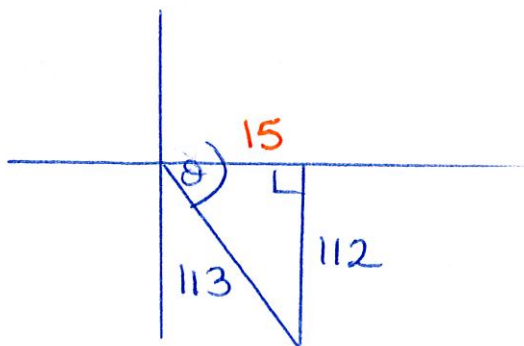


$\sin \theta = \frac{132}{157}$	$\csc \theta = \frac{157}{132}$
$\cos \theta = \frac{85}{157}$	$\sec \theta = \frac{157}{85}$
$\tan \theta = \frac{132}{85}$	$\cot \theta = \frac{85}{132}$

6.  $\sin \theta = -\frac{112}{113}$ , and  $\tan \theta < 0$ .

Since tan is negative, we must eliminate Q3.

Since sin is negative,  $\theta$  must lie in Q3 or Q4.



$\sin \theta = -\frac{112}{113}$	$\csc \theta = -\frac{113}{112}$
$\cos \theta = \frac{15}{113}$	$\sec \theta = \frac{113}{15}$
$\tan \theta = -\frac{112}{15}$	$\cot \theta = -\frac{15}{112}$

Intro to Trig Review

Remember, reference angles must be positive and acute (less than  $90^\circ$ )

Convert to radian measures in terms of  $\pi$ .

1.  $-190^\circ \times \frac{\pi}{180^\circ} = \frac{-190\pi}{180} = \frac{-19\pi}{18}$

2.  $130^\circ \times \frac{\pi}{180^\circ} = \frac{130\pi}{180} = \frac{13\pi}{18}$

Convert to Degrees.

3.  $\frac{-5\pi}{2} \times \frac{180^\circ}{\pi} = \frac{-900^\circ}{2} = -450^\circ$

4.  $\frac{13\pi}{4} \times \frac{180^\circ}{\pi} = \frac{2340^\circ}{4} = 585^\circ$

Name one positive and one negative angle coterminal with  $\theta$ .

5.  $\theta = -140^\circ + 360^\circ \rightarrow 220^\circ$   
 $-360^\circ \rightarrow -500^\circ$

6.  $\theta = \frac{10\pi}{3} + 2\pi \rightarrow \frac{16\pi}{3}$   
 $-2\pi - 2\pi \rightarrow -\frac{2\pi}{3}$

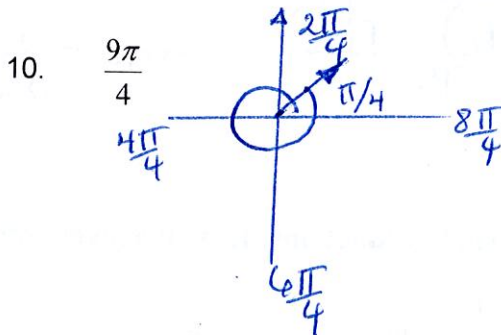
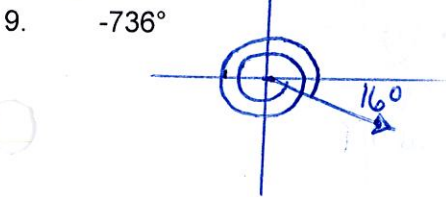
your answers may be different

In which quadrant does  $\theta$  lie?

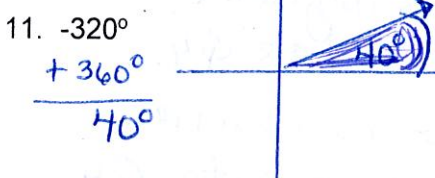
7.  $\theta = -135^\circ + 360^\circ = 225^\circ$   
 this is the principle angle; it lies in Q3

8.  $\theta = \frac{3\pi}{5}$   
 Q2

Sketch the indicated angle in standard position. Indicate the direction of rotation and the degrees where necessary.

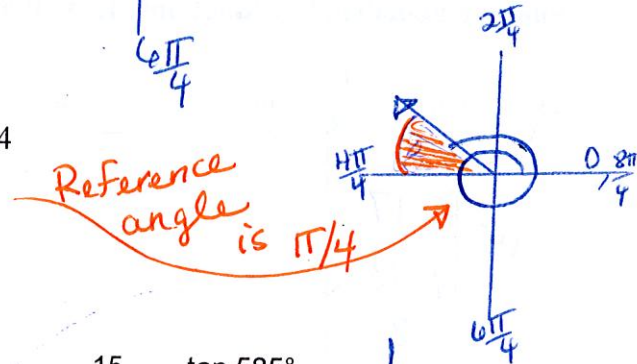


Find the reference angle.



the principle angle is in Q1; the reference angle is  $40^\circ$

12.  $11\pi/4$



Find the exact value (use the unit circle baby calculator only)

13.  $\sin \frac{-9\pi}{4} = \frac{-\sqrt{2}}{2}$

14.  $\cos 480^\circ = \frac{-1}{2}$

15.  $\tan 585^\circ = 1$

16.  $\sec \frac{11\pi}{3} = 2$

17.  $\csc (-510^\circ) = -2$

18.  $\cot \pi = \text{UND}$

Find the exact value of the inverse (use the unit circle baby calculator only)

19.  $\tan^{-1}(-\sqrt{3}) = \frac{2\pi}{3}, \frac{5\pi}{3}$

20.  $\cot^{-1}(0) = \frac{\pi}{2}, \frac{3\pi}{2}$

21.  $\cos^{-1}(-1) = \pi$

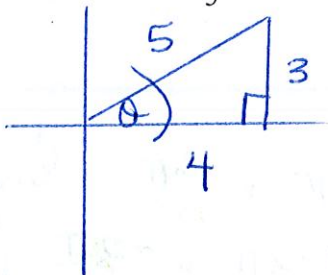
22.  $\csc^{-1}\left(\frac{2\sqrt{3}}{3}\right) = \frac{\pi}{3}, \frac{2\pi}{3}$

23.  $\sin^{-1}\frac{1}{2} = \frac{\pi}{6}, \frac{5\pi}{6}$

24.  $\sec^{-1}\sqrt{2} = \frac{\pi}{4}, \frac{7\pi}{4}$

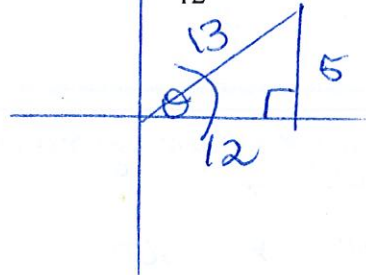
Use the given information to find the trig value

25. Given  $\sin \theta = \frac{3}{5}$ , find  $\tan \theta$



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

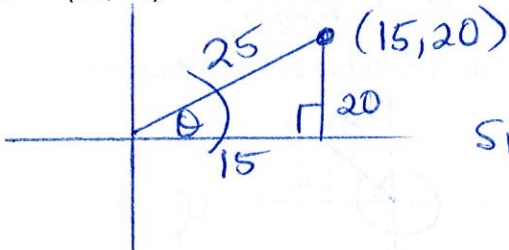
26.  $\tan \theta = \frac{5}{12}$ , find  $\sec \theta$



$\sec \theta = \frac{13}{12}$

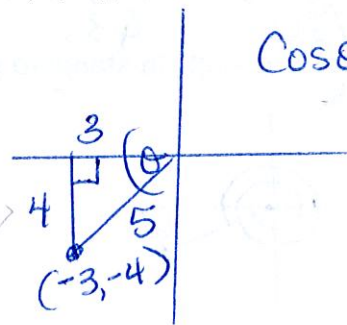
Find the trig function of the angle  $\theta$  in standard position whose terminal side passes through:

27. (15, 20) find  $\sin \theta$



$\sin \theta = \frac{20}{25} = \frac{4}{5}$

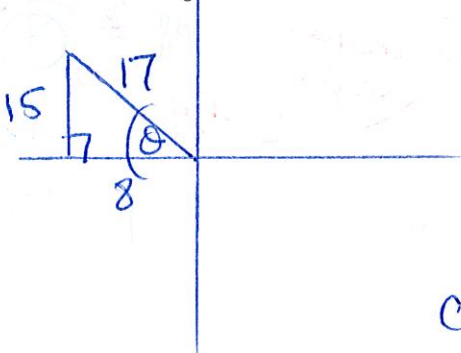
28. (-3, -4), find  $\cos \theta$



$\cos \theta = -\frac{3}{5}$

Find the specified trig functions using the given information.

29.  $\tan \theta = -\frac{15}{8}$ ,  $\sin \theta > 0$  Find  $\csc \theta$



$\csc \theta = \frac{17}{15}$

Since  $\tan \theta$  is negative,  $\theta$  lives in Q2 or Q4.

Since  $\sin \theta$  is positive, we must eliminate Q4.

This organizer is to help remember which trig functions are positive in a given quadrant.

