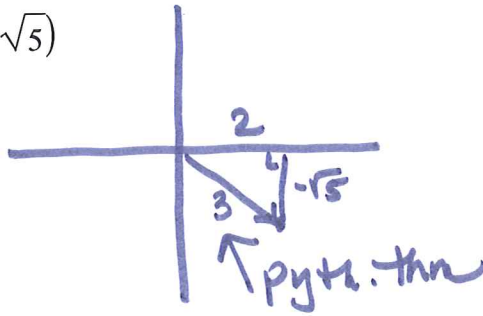


Exact Values Review

Use the given point on the terminal side of angle  $\theta$  to find the value of the trigonometric function indicated.

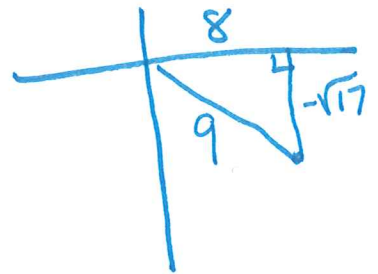
1)  $\sec \theta; (2, -\sqrt{5})$

$\frac{3}{2}$



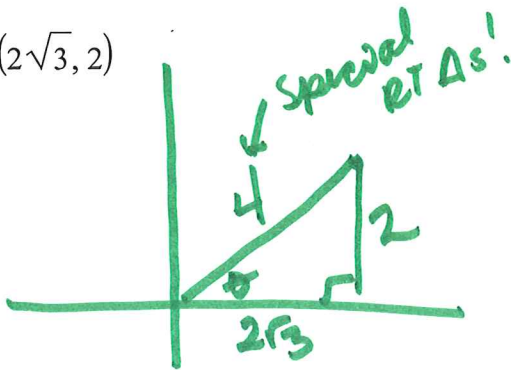
2)  $\sec \theta; (8, -\sqrt{17})$

$\frac{9}{8}$



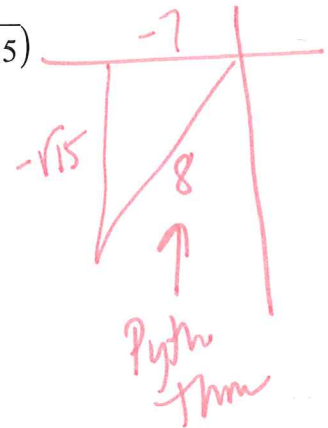
3)  $\csc \theta; (2\sqrt{3}, 2)$

2



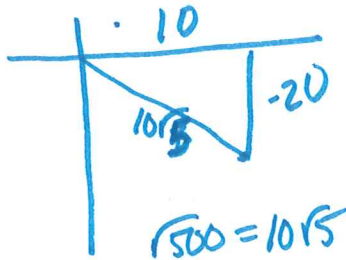
4)  $\csc \theta; (-7, -\sqrt{15})$

$-\frac{8\sqrt{15}}{15}$



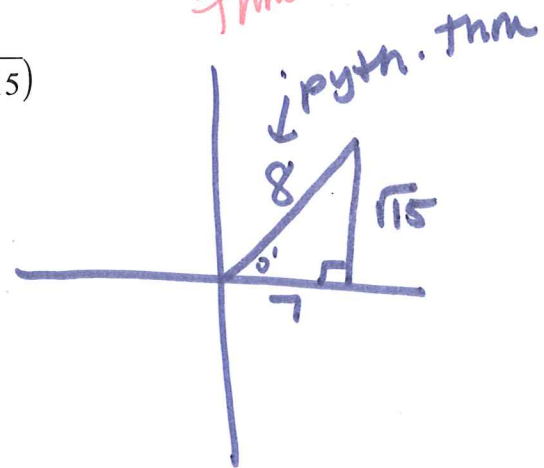
5)  $\csc \theta; (10, -20)$

$-\frac{\sqrt{5}}{2}$



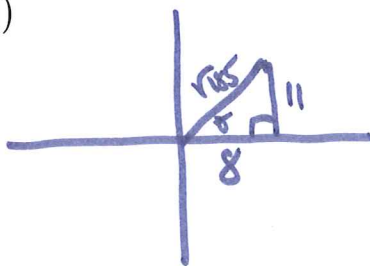
6)  $\tan \theta; (7, \sqrt{15})$

$\frac{\sqrt{15}}{7}$



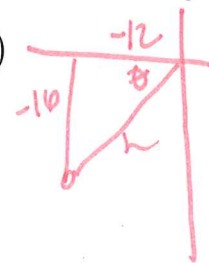
7)  $\cot \theta; (8, 11)$

$\frac{8}{11}$



8)  $\cot \theta; (-12, -16)$

$\frac{3}{4}$



9)  $\tan \theta; (6, 18)$

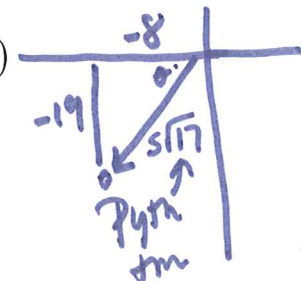
3



10)  $\csc \theta; (-8, -19)$

$-\frac{5\sqrt{17}}{19}$

$\sqrt{425} = 5\sqrt{17}$



$\sqrt{300}$

Find the exact value of each trigonometric function. Using the UNIT CIRCLE METHOD. Place the # on the completed unit circle and list your point on this page.

11)  $\tan 945^\circ$  ①  $(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$

12)  $\cot 0^\circ$  (1,0)

Undefined

13)  $\sec \frac{5\pi}{3}$  ②  $(\frac{1}{2}, -\frac{\sqrt{3}}{2})$

14)  $\tan 90^\circ$  (0,1)

Undefined

15)  $\csc 450^\circ$  ① 1 (0,1)

16)  $\sin -\frac{5\pi}{6}$   $(-\frac{\sqrt{3}}{2}, -\frac{1}{2})$

$-\frac{1}{2}$

17)  $\csc 510^\circ$  ②  $(-\frac{\sqrt{3}}{2}, \frac{1}{2})$

18)  $\sec -570^\circ$   $(-\frac{\sqrt{3}}{2}, \frac{1}{2})$

$-\frac{2\sqrt{3}}{3}$

19)  $\cot 750^\circ$   $\sqrt{3}$   $(\frac{\sqrt{3}}{2}, \frac{1}{2})$

20)  $\csc \frac{19\pi}{4}$   $(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2})$

$\sqrt{2}$

21)  $\sin -420^\circ$   $(\frac{1}{2}, -\frac{\sqrt{3}}{2})$

22)  $\sin -5\pi$  (-1,0)

0

23)  $\csc -\frac{23\pi}{6}$  ②  $(\frac{\sqrt{3}}{2}, \frac{1}{2})$

24)  $\tan 750^\circ$   $(\frac{\sqrt{3}}{2}, \frac{1}{2})$

$\frac{\sqrt{3}}{3}$

25)  $\sin \frac{23\pi}{6}$   $(\frac{\sqrt{3}}{2}, -\frac{1}{2})$

26)  $\csc -\frac{5\pi}{6}$   $(-\frac{\sqrt{3}}{2}, -\frac{1}{2})$

-2

27)  $\csc -\frac{5\pi}{2}$  ① (-1,0)

28)  $\tan \frac{3\pi}{2}$  (0,-1)

Undefined

29)  $\sec \pi$  -1 (1,0)

30)  $\cot \frac{13\pi}{4}$   $(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$

1

Find the exact value of each trigonometric function, using the TRIANGLE METHOD!

31)  $\tan 540^\circ$   $x=-1$   $y=0$   $r=1$

0

$\tan 540^\circ = \frac{0}{-1}$

$\tan 540^\circ = 0$

32)  $\sin \frac{14\pi}{3}$

$\frac{\sqrt{3}}{2}$

$\frac{9\pi}{3}$   $\frac{11\pi}{3}$   $\frac{12\pi}{3}$

$-\frac{1}{2}$

$\sin \frac{14\pi}{3} = \frac{\sqrt{3}}{2}$

33)  $\tan \frac{16\pi}{3}$

$\sqrt{3}$

$\tan \frac{16\pi}{3} = \sqrt{3}$

$\tan \frac{16\pi}{3} = \frac{1}{-1/2} = -2$

34)  $\sec 330^\circ$  recip.  $\cos!$   $= \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$

$\frac{2\sqrt{3}}{3}$

$\sin 330^\circ = \frac{2\sqrt{3}}{3}$

35)  $\tan 3\pi$   $r=1$

0  $x=-1$   $y=0$

$\tan 3\pi = \frac{0}{-1}$

$\tan 3\pi = 0$

36)  $\tan -\frac{11\pi}{4}$

1

$\tan -\frac{11\pi}{4} = 1$

37)  $\cot -\frac{17\pi}{4}$

$\cot -\frac{17\pi}{4} = \frac{-1}{\frac{\sqrt{2}}{2}} = -\frac{\sqrt{2}}{2}$

$\cot -\frac{17\pi}{4} = -1$

38)  $\sec -1020^\circ$   $\sec -1020^\circ = \frac{2}{1}$

2

$\sec -1020^\circ = 2$

$\tan 60^\circ = \frac{\sqrt{3}}{1} = \sqrt{3}$

39)  $\cot \frac{7\pi}{6}$

$\sqrt{3}$

$\cot \frac{7\pi}{6} = \frac{-1/2}{\sqrt{3}/2} = -\frac{1}{\sqrt{3}}$

$\cot \frac{7\pi}{6} = \sqrt{3}$

40)  $\tan 60^\circ$

$\sqrt{3}$

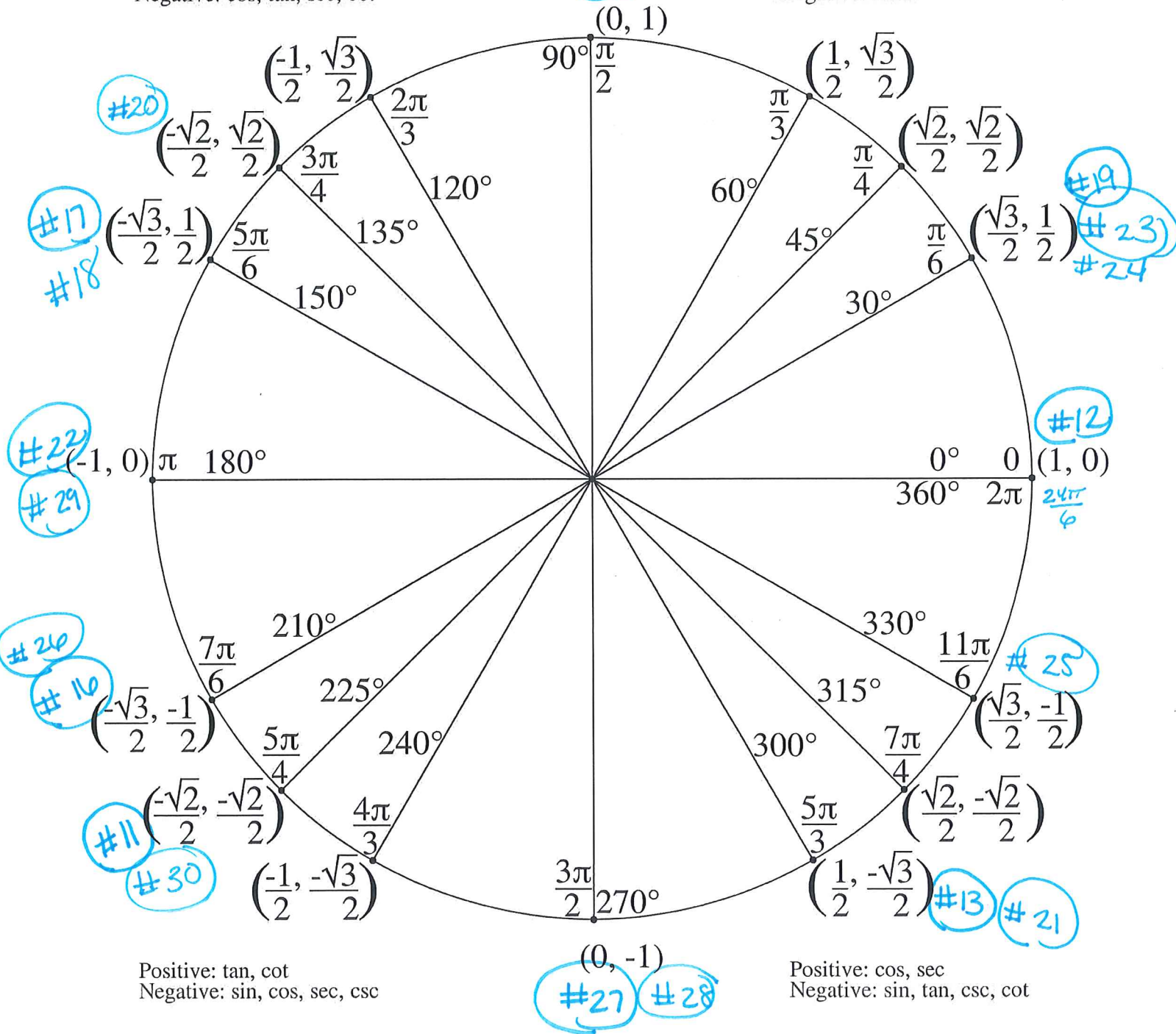
$\tan 60^\circ = \sqrt{3}$



# The Unit Circle

Positive: sin, csc  
Negative: cos, tan, sec, cot

Positive: sin, cos, tan, sec, csc, cot  
Negative: none



Positive: tan, cot  
Negative: sin, cos, sec, csc

Positive: cos, sec  
Negative: sin, tan, csc, cot