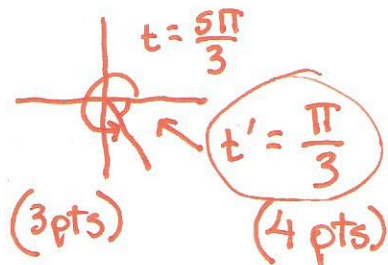


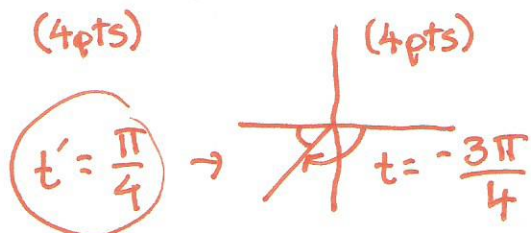
Show any relevant work. For each problem, circle your final answer

1. (15 points) For each value of  $t$  given below, find the reference number  $t'$  and the coordinates of the terminal point determined by  $t$ . Include a reference angle sketch.

a.  $t = \frac{5\pi}{3}$

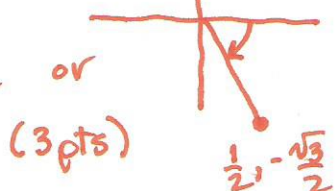
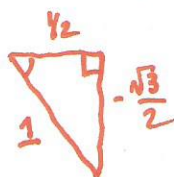


b.  $t = -\frac{3\pi}{4}$



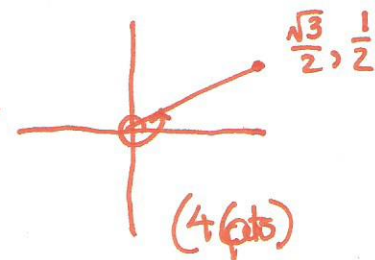
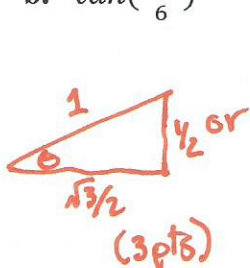
2. (15 points) Find the exact value of each of the following. Include a reference angle sketch.

a.  $\csc(-\frac{\pi}{3})$  (3 pts)



$\csc \theta = \frac{H}{O} = \frac{1}{y} = -\frac{1}{-\sqrt{3}/2} = \frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$  (4 pts)

b.  $\tan(\frac{13\pi}{6})$



$\tan \theta = \frac{O}{A} = \frac{y}{x} = \frac{1/2}{\sqrt{3}/2} = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$  (4 pts)

3. (16 points) Suppose  $\cos x = -\frac{12}{13}$  and  $\sin x > 0$ . Find the following: (Include a reference triangle)

a.  $\cos(-x) = -\frac{12}{13}$

even function (5 pts)

b.  $\sin(x)$

$\sin x = \frac{5}{13}$  (5 pts)

