Math 112: #12

1. Sketch a carefully labeled graph of the unit circle, and sketch all rays from the origin corresponding to the special angles, which comprise all multiples of $\frac{\pi}{6}$ or $\frac{\pi}{4}$ up to 2π. Write the exact x-y coordinates of each of the points on the unit circle at the intersections with those rays, followed by the angles in radian measure.

$\frac{\pi}{2}$　$(0,1)$

$\frac{2\pi}{3}, \left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$

$\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right), \frac{\pi}{3}$

$\frac{3\pi}{4}, \left(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$

$\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right), \frac{\pi}{4}$

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

$\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right), \frac{\pi}{6}$

$\pi, (-1,0)$

$(1,0), 0$ radians

$\left(\frac{\sqrt{3}}{2}, -\frac{1}{2}\right), \frac{11\pi}{6}$

$\frac{7\pi}{6}, \left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$

$\left(\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right), \frac{7\pi}{4}$

$\frac{5\pi}{4}, \left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$

$\left(\frac{1}{2}, -\frac{\sqrt{3}}{2}\right), \frac{5\pi}{3}$

$\frac{4\pi}{3}, \left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$

$(0,-1)$

$\frac{3\pi}{2}$