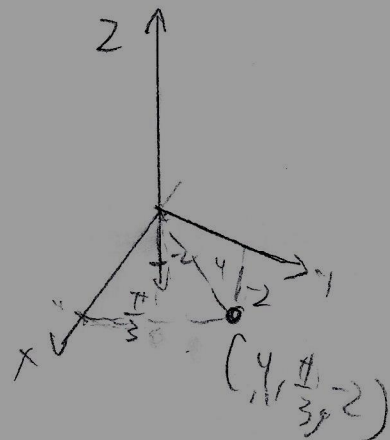15.7 homework   1,3,5,7,9, 11,13,15, 17, 19,21,23, 25,

① ⓐ $(4, \pi/3, -2)$ $\tan(\frac{\pi}{3}) = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = 1$

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

$x = \frac{1}{2}$ $y = \frac{\sqrt{3}}{2}$

$x = 4(\frac{1}{2})$ $y = 4(\frac{\sqrt{3}}{2})$

$x = 2$ $y = 2\sqrt{3}$

$\boxed{(2, 2\sqrt{3}, -2)}$

ⓑ $(2, -\frac{\pi}{2}, 1)$

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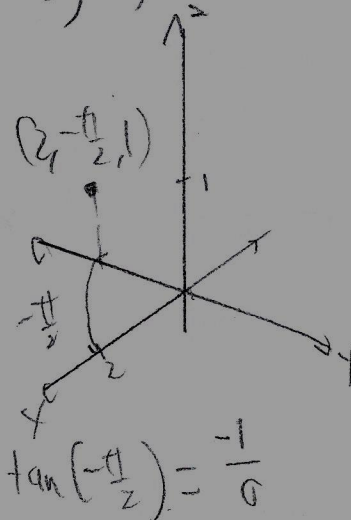
$\tan(-\frac{\pi}{2}) = \frac{-1}{0}$

$x = 0$ $y = -1$

$x = 2(0)$ $y = 2(-1)$

$x = 0$ $y = -2$

$\boxed{(0, -2, 1)}$

③ ⓐ $(-1, 1, 1)$

$\tan\theta = -1$

$\theta = -\frac{\pi}{4} = \frac{3\pi}{4}$

$-1 = r\cos(\frac{3\pi}{4})$ $1 = r\sin(\frac{3\pi}{4})$

$-1 = r(\frac{\sqrt{2}}{2})$ $\frac{2}{\sqrt{2}} = r$

$r = \frac{+2}{\sqrt{2}}$

$\boxed{(\sqrt{2}, \frac{3\pi}{4}, 1)}$

ⓑ $(-2, 2\sqrt{3}, 3)$

$\tan\theta = -\sqrt{3}$

$\theta = -\frac{\pi}{3} = \frac{2\pi}{3}$

$-2 = r\cos(\frac{2\pi}{3})$ $2\sqrt{3} = r\sin(\frac{2\pi}{3})$

$-2 = r(-\frac{1}{2})$ $2\sqrt{3} = r(\frac{\sqrt{3}}{2})$

$r = 4$ $4 = r$

$\boxed{(4, \frac{2\pi}{3}, 3)}$