[2] [a] F [b] H [c] $-\frac{11\pi}{6}$ [d] $\frac{5\pi}{3}$

[3] [a] $(7, -\frac{2\pi}{9}+\pi) = (7, \frac{7\pi}{9})$

$(-7, -\frac{2\pi}{9}+2\pi) = (-7, \frac{16\pi}{9})$

[b] $(7, \frac{4\pi}{5}-2\pi) = (7, -\frac{6\pi}{5})$

$(-7, \frac{4\pi}{5}-\pi) = (-7, -\frac{\pi}{5})$

[4] [a] $(x,y) = (-6\cos(-\frac{9\pi}{4}), -6\sin(-\frac{9\pi}{4})) = (-6(\frac{\sqrt{2}}{2}), -6(-\frac{\sqrt{2}}{2}))$

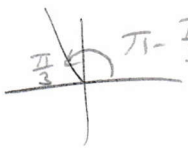
$\theta = -2\frac{1}{4}\pi$ IN Q_4 $= (-3\sqrt{2}, 3\sqrt{2})$

$\theta_{REF} = \frac{\pi}{4}$

[b] $r = \sqrt{(-3\sqrt{3})^2+9^2} = \sqrt{27+81} = \sqrt{108} = 6\sqrt{3}$

$\theta_{REF} = \tan^{-1}\left|\frac{9}{-3\sqrt{3}}\right| = \tan^{-1}\sqrt{3} = \frac{\pi}{3}$

(x,y) IN $Q_2 \rightarrow \theta$ IN Q_2 $\quad \pi - \frac{\pi}{3} = \frac{2\pi}{3}$



$(r,\theta) = (6\sqrt{3}, \frac{2\pi}{3})$

[c] $r = 4\cos^3\theta - 3\cos\theta$ FROM 5.5 LECTURE

$r = 4(\frac{x}{r})^3 - 3(\frac{x}{r}) = \frac{4x^3}{r^3} - \frac{3x}{r}$

$r^4 = 4x^3 - 3xr^2$

$(x^2+y^2)^2 = 4x^3 - 3x(x^2+y^2)$

$(x^2+y^2)^2 = x^3 - 3xy^2$

[d] $(r\cos\theta - 2)^2 + (r\sin\theta + 1)^2 = 5$

$r^2\cos^2\theta - 4r\cos\theta + 4 + r^2\sin^2\theta + 2r\sin\theta + 1 = 5$

$r^2(\cos^2\theta + \sin^2\theta) + r(-4\cos\theta + 2\sin\theta) = 0$

$r^2 + r(-4\cos\theta + 2\sin\theta) = 0$

$r^2 = r(4\cos\theta - 2\sin\theta)$

$r = 4\cos\theta - 2\sin\theta$