5.1B Part B Notes

example 9: $1 - 6\cos^2\theta = -2\cos^2\theta$

$1 = 4\cos^2\theta$

$\frac{1}{4} = \cos^2\theta$

$\frac{1}{2} = \cos\theta$

$\theta = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$

example 10: $2\sin^2\theta = 1 + \sin\theta$

$0 = 1 + \sin\theta - 2\sin^2\theta$

$-2\sin^2\theta + \sin\theta + 1$

$(\sin\theta - 1)(\sin\theta + \frac{1}{2}) = 0$

-2 | -2 | 1 | -1

$\sin\theta = 1 \qquad \sin\theta = -\frac{1}{2}$

$\theta = \frac{\pi}{2}, \frac{7\pi}{6}, \frac{11\pi}{6}$

example 11: $t = 0.7953987$

$t = 5.4877865$

$\cos^{-1}(0.7) = 0.7954$

$2\pi - 0.7954 = 5.488$

example 12: $\tan x \cos x$

$\frac{\sin x}{\cos x}$ $\sin x$

example 13: $\cos x - \cos^3 x$

$\cos x (1 - \cos^2 x)$

$\sin^2 x + \cos^2 x = 1$

$\sin^2 x = 1 - \cos^2 x$

$\cos x (\sin^2 x)$

example 14:

$\sin^2(-x) + \cos^2(-x)$

even/odd $\sin(-x) = -\sin x$

$\cos(-x) = \cos x$

$(-\sin(+x))^2 + (\cos(+x))^2$

$\sin^2 x + \cos^2 x$

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