

[8] 1.) Show that $\langle a_0 + a_1t, b_0 + b_1t \rangle = b_0 + a_1b_1$ is NOT an inner product on P_1 .

2.) Let P_2 have the inner product $\langle a_0 + a_1t + a_2t^2, b_0 + b_1t + b_2t^2 \rangle = a_0b_0 + a_1b_1 + a_2b_2$

[4] 2a.) $\|3 + 10t^2\| = \underline{\hspace{2cm}}$

[4] 2b.) $\langle 4 - 8t + t^2, 3 + t - 4t^2 \rangle = \underline{\hspace{2cm}}$

[2] 2c.) Is $4 - 8t + t^2$ orthogonal to $3 + t - 4t^2$?