Homework 8 Corrections

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Problem 2

All terms should cancel leaving $[A_x, H] = 0$, $[A_y, H] = 0$, and $[A_z, H] = 0$.

Problem 3

c.

I needed to integrate $Qtanq$ which resulted in the generating function $F_1 = -Qln(cosq) + f_1(Q)$. integrating now that F_1 is known, for P we get $P = -Qln(cosq) + Q(lnQ-1) + f_2(q)$. The generating function can be reduced to

$$F_1(q, Q) = -Qln(cosq) + Q(lnQ - 1).$$

Using this generating function we can find that

$$Q = \frac{p}{tanq}$$

and

$$P = ln\left(\frac{sinq}{p}\right)$$