(1)[**5 points**] Sketch the plane defined by $2x + 3y + 6z = 6$. You need only show that part of the plane in the region where $x \geq 0$, $y \geq 0$ and $z \geq 0$.

(2)[**5 points**] Let $h(r, s, t, u) = (s^2 + tu) \ln (2r + 7st)$. Evaluate $h_s(1, 0, 0, 1)$.

(3)[5 points] Demand functions for products A and B are

$$q_A = \frac{30\sqrt{p_B}}{p_A^{2/3}} \text{ and } q_B = \frac{50p_A}{p_B^{1/3}} \ .$$

Here q_A, q_B represent units of product, while p_A, p_B are the respective prices in dollars.

(i) Find both the marginal demand of A with respect to p_A and the marginal demand of A with respect to p_B at $(p_A, p_B) = (8, 64)$.

(ii) Use (i) to estimate the change in q_A if p_B in increased from 64 to 66 while p_A remains at 8.