

Student Number: XXXXXXXXXXName: Bryan Hoang

8. (10 points)

(a) **Answer:**

Bob should send the point $Q_B = n_B P = 1943(1980, 431) = (1432, 667) \in E(\mathbb{F}_{2671})$ to Alice.

(b) **Answer:**

Their shared secret value is the x -coordinate of the point $n_B Q_A = 1943(2110, 543) = (2424, 911) \in E(\mathbb{F}_{2671})$.

(c) **Answer:**

It seems pretty difficult for Eve to figure out Alice's secret multiplier n_A by hand. Through programming though, Eve can deduce that $n_A = 726$.