Student Number: ▬▬▬▬ Name: <u>Bryan Hoang</u>

4. (10 points)

(a) **Answer:**

Table 1: Addition table for $E(\mathbb{F}_5) = \{\mathscr{O}, (1,2), (1,3), (4,0)\}$.

| + | $\mathscr{O}$ | (1, 2) | (1, 3) | (4, 0) |
|---|---|---|---|---|
| $\mathscr{O}$ | $\mathscr{O}$ | (1, 2) | (1, 3) | (4, 0) |
| (1, 2) | (1, 2) | (4, 0) | $\mathscr{O}$ | (1, 3) |
| (1, 3) | (1, 3) | $\mathscr{O}$ | (4, 0) | (1, 2) |
| (4, 0) | (4, 0) | (1, 3) | (1, 2) | $\mathscr{O}$ |

(b) **Answer:**

Table 2: Addition table for $E(\mathbb{F}_7) = \{\mathscr{O}, (2,1), (2,6), (3,1), (3,6), (6,0)\}$.

| + | $\mathscr{O}$ | (2, 1) | (2, 6) | (3, 1) | (3, 6) | (6, 0) |
|---|---|---|---|---|---|---|
| $\mathscr{O}$ | $\mathscr{O}$ | (2, 1) | (2, 6) | (3, 1) | (3, 6) | (6, 0) |
| (2, 1) | (2, 1) | (3, 6) | $\mathscr{O}$ | (2, 6) | (6, 0) | (3, 1) |
| (2, 6) | (2, 6) | $\mathscr{O}$ | (3, 1) | (6, 0) | (2, 1) | (3, 6) |
| (3, 1) | (3, 1) | (2, 6) | (6, 0) | (3, 6) | $\mathscr{O}$ | (2, 1) |
| (3, 6) | (3, 6) | (6, 0) | (2, 1) | $\mathscr{O}$ | (3, 1) | (2, 6) |
| (6, 0) | (6, 0) | (3, 1) | (3, 6) | (2, 1) | (2, 6) | $\mathscr{O}$ |