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5. (10 points)

(a) **Answer:**

$E(\mathbb{F}_3) = \{\mathcal{O}, (0,1), (0,2), (1,0)\} \Rightarrow \#E(\mathbb{F}_3) = 4 \Rightarrow t_3 = 0 \Rightarrow |0| \leq 2\sqrt{3} \approx 3.5.$

(b) **Answer:**

$E(\mathbb{F}_5) = \{\mathcal{O}, (0,1), (0,4), (2,1), (2,4), (3,1), (3,4), (4,2), (4,3)\} \Rightarrow \#E(\mathbb{F}_5) = 9 \Rightarrow t_5 = -3 \Rightarrow |-3| \leq 2\sqrt{5} \approx 4.5.$

(c) **Answer:**

$E(\mathbb{F}_3) = \{\mathcal{O}, (0,1), (0,6), (2,2), (2,5)\} \Rightarrow \#E(\mathbb{F}_7) = 5 \Rightarrow t_7 = 3 \Rightarrow |3| \leq 2\sqrt{7} \approx 5.3.$