Write a response to one of the following questions utilizing in your answer at least two sources from the assigned course reading and one independent source.

1. Code as Weapon

Neal Stephenson, in his novel Cryptonomicon, writes, “Carpenters work with wood and carry a box of technology for measuring it, cutting it, smoothing it, joining it. Mathematicians work with information and need a tool of their own.” Discuss how Information Theory and code are used in the novel. What are the technologies engaged? Why is in a code-breaking war is 2702 a better name for a battalion than not 2701?

2. Military historian Martin Van Crevald in chapter 16 of Technology and War discuss the exponential amount of pure information needed to run modern warfare, particularly with the universal adoption of mechanical code and code-breaking devices in WWII. Read the following passage from 1984 and comment on Crevald’s statement.

The Ministry of Truth contained, it was said, three thousand rooms above ground level, and corresponding ramifications below. Scattered about London there were just three other buildings of similar appearance and size. So completely did they dwarf the surrounding architecture that from the roof of Victory Mansions you could see all four of them simultaneously. They were the homes of the four Ministries between which the entire apparatus of government was divided. The Ministry of Truth, which concerned itself with news, entertainment, education, and the fine arts. The Ministry of Peace, which concerned itself with war. The Ministry of Love, which maintained law and order. And the Ministry of Plenty, which was responsible for economic affairs. Their names, in Newspeak: Minitrue, Minipax, Miniluv, and Miniplenty.

3. Discuss the examples in Singh’s book Code of the use of code in warfare before the engagement of mathematicians as code writers (a pre-mechanical use of code).