

Problem 6.2)

Program D can't correctly determine whether CV is a virus or not for the following reasons:

1. If D(CV) returns true: then it skips to the next program meaning that even though D flagged CV as a virus, it skips to the next one and doesn't infect anything meaning CV doesn't act like a virus, contradicting the initial decision.
2. If D(CV) returns false: then it scans for executables and replicates itself onto those, thus acting like a virus, also contradicting its initial decision.

So either D says CV isn't a virus but then CV acts like a virus or D says CV is a virus but then CV doesn't act like a virus. This creates a paradox of sorts.

Problem 6.3)

The Metamorphic code does exactly the same thing as the original code however it is designed to look more complicated and add harmless movements between registers so that if an antivirus scanner looks at the program it is less likely that the program will be flagged as a virus.