7.012 Solutions to:
Applications of recombinant DNA technology

a) 5' CTGAATTACGT 3'

b) No, Yasemin's DNA sequence for gene K is different than that found on the note.

c) See above

d) Susan and Michel. Their DNA samples at the gene L locus do not match the sample found on the bag.

e) The strategy is as follows:
You design the following two primers to PCR amplify position Z.

\[
\begin{align*}
\text{primer 1} & \text{ primer 2} \\
5' \text{ GTGCA} & \longrightarrow 3' \text{ GCTGC} \\
\end{align*}
\]

f) i) 1: Winston
    2: Michel
    3: Susan
    4: Chia or Yasemin
    5: Divya
    6: Chia or Yasemin

ii) Chia must have committed this crime. Only Yasemin and Chia match the sample taken from the note. Yasemin is no longer a suspect due to part a.