Math 135 (Summer 2006)
Warm-up Exercises for July 6, 2006
Recall that the numerical equivalents of the letters are as follows:

| A | B | C | D | E | F | G | H | I | J | K | L | M |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| N | 0 | P | Q | R | S | T | U | V | W | X | Y | Z |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |

(a) Encrypt the word CORNELL using the affine cipher $E(x)=(3 x+2)$ MOD 26.
(b) Encrypt the word CORNELL using the cipher alphabet determined the keyword columnar transposition substitution with the keyword RAWLINGS.


