



# Coding The Alphabet

1. Suppose we assign a value to every letter in the alphabet:

|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| A | B | C | D | E | F | G | H | I | J  | K  | L  | M  | N  | O  | P  | Q  | R  | S  | T  | U  | V  | W  | X  | Y  | Z  |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |

The value of a word is found by changing its letters into numbers and adding them. For example, the word **BAD** has the value of 7 because  $2 + 1 + 4 = 7$ .

a. Write the value of each letter beside the words listed below, and find the values of the following animal names:

cow

dog

pig

lion

deer

bear

b. Find an example of an animal whose name's value is between 100 and 200.

2. a. Joan has decided to change the code and has given every letter some secret number. If you know that the value of **ON** is **5** and the value of **TO** is **7**, what can **O**, **N**, and **T** be?

Can you find another set of number values for **O**, **N** and **T**?

Have you found them all? How do you know?

- b. Using this **same** code, how many different solutions for **O**, **N**, and **T** will you have, if you are given the additional information that the value of **TOO** is **9**?