



# Problem of the Week

## Problem A

### The Keys to Hidden Messages

There are many ways to encode messages. Here is an encoding using just zeros and ones.

0 0 0 1 1 0 0 1 0 1 1 0 1 1 1 0

This single sequence could represent many different messages. To decode the information correctly, you need a key. The actual message that the encoding represents depends on the key you use to decode it.

Here are two keys which could be used to decode the message:

#### Alpha Key

Letter	Code
C	1 0 0
D	1 0 1 0
E	0 1
O	1 1 1
R	1 0 1 1
S	0 0
T	1 1 0

#### Beta Key

Letter	Code
C	0 0 0 1
D	0 1 1 0
E	1 1 1 0
O	1 0 0 1
R	1 0 1 0
S	0 1 0 1
T	1 0 1 1

- (a) What is the message if you decode it using the **Alpha Key**?
- (b) What is the message if you decode it using the **Beta Key**?

