

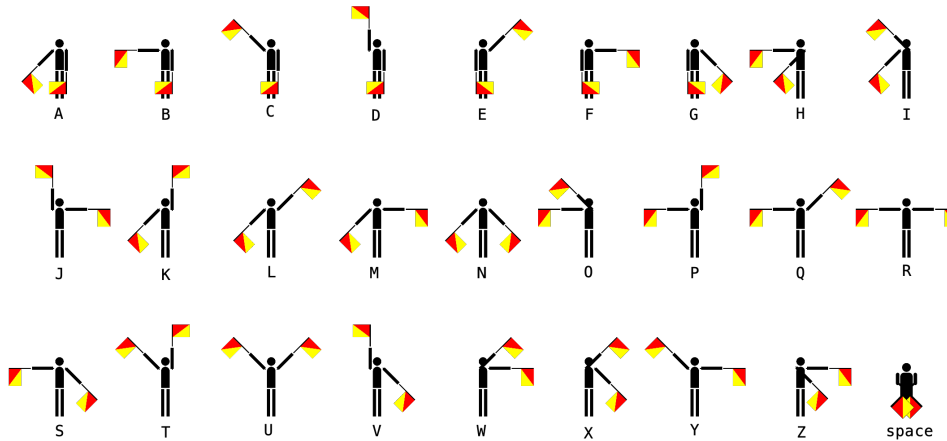


Problem of the Week

Problem B and Solution

Flangles

Problem

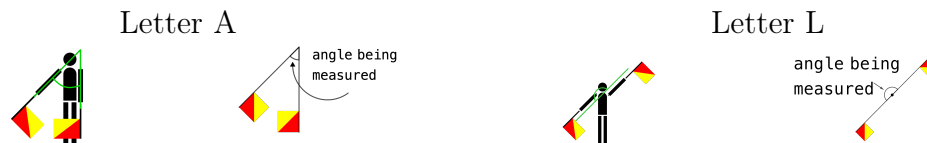


Semaphore signal flags are used to communicate in places such as on aircraft carriers. Each letter is represented by a specific position of the two flags. Each flag is placed vertically, horizontally, or exactly halfway between the vertical and the horizontal.

- a) Add each letter to the table below by looking at the type of angle between the two flags in the signal for that letter. Letters A and L are already placed. The 'space' is not a letter. It is used to put a space between words. Assume the angles are between 0° and 180° , but can also include 0° and 180° .

Angle Type	Letters
Acute	A,
Right	
Obtuse	
Straight	L,

Here is how we know that the angle for letter A is acute and for letter L is straight:



- b) When communicating with semaphore signal flags, there are only four different angle measurements between the two flags. What are these angles? Assume the angles are between 0° and 180° , but can also include 0° and 180° .
- c) Try to communicate a simple message to a friend using your arms as semaphores.



Solution

a) The appropriate groups of letters are:

Angle Type	Letters
Acute	A, G, H, O, T, W, Z
Right	B, F, I, J, N, P, U, X
Obtuse	C, E, K, M, Q, S, V, Y
Straight	D, L, R

b) Since each acute angle is halfway between horizontal and the vertical, each one must measure $\frac{1}{2}$ of 90° which is 45° .

Also, each obtuse angle must measure $90^\circ + 45^\circ = 135^\circ$.

Therefore, the four angles in use are 45° , 90° , 135° , and 180° .