



Problem of the Week

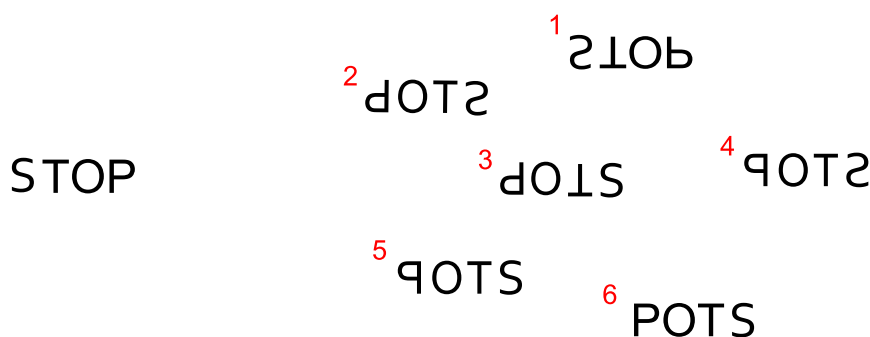
Problem B

Do Please **STOP** It!

Problem

On the left below is the word **STOP**. On the right are six objects which may or may not be the result of a transformation of the whole word **STOP**, i.e., one or more translations (slides), reflections (flips), or rotations (turns).

Cross out the objects on the right which are NOT possible transformations of the whole word **STOP**.



Discuss your conclusions with one of your classmates, explaining your reasoning.

Solution

The solution and explanations are shown in the diagrams below.



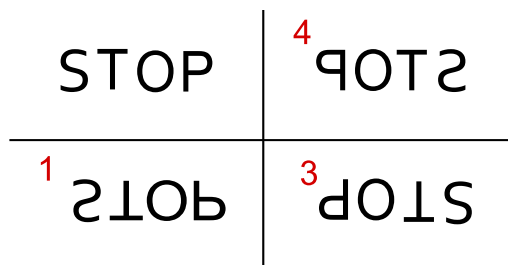
Almost a reflection, but the P is upside down.



Almost a reflection, but the S is not reflected.



A partial reflection, but the S and P are not reflected.



The above diagram reveals that objects 1 and 4 are reflections across either a horizontal (1) or vertical (4) line. Object 3 is the result of reflection across a vertical line then a horizontal line; it may also be thought of as a rotation of 180 degrees.

NOTE: Other answers are possible. For example, object 4 could be regarded as the result of a slide to the right of one width of the word, followed by a flip about a vertical line at the left end of the word.

