Problem of the Week
Problem B
Don’t Catch a Code!

A robot moves on a grid using the codes shown to the right.

Turn 90° Clockwise
Translate Right ____ Spaces
Translate Left ____ Spaces
Translate Down ____ Spaces
Translate Up ____ Spaces

NOTE: When the “Turn 90° Clockwise” code is used, the robot turns inside the four squares.

a) Using the trapezoid shown on the following grid and starting from the star in the lower left-hand corner, write a suitable set of code which will move the trapezoid to the final position A in the fewest lines of code. Note that when translating the robot, the instruction is carried out from whichever orientation the robot is currently in.

b) Repeat part a) for final position B. Start from the star again.

c) Using the trapezoid shown on the grid, again starting from the star at the lower left-hand corner, write a suitable set of code which will create a shape of your choice. In our solution, we create an Inukshuk shape. You will need to add a “Print” command to the list of codes so you can print a copy of the trapezoid at a desired position. When one of the other commands is executed after the “Print” command, the instruction is carried out from the present location of the trapezoid.

d) Challenge a classmate to write suitable code for the shape you created in the previous part. Then discuss your codes together to see whether improvements to the code can be made.

STRAND  GEOMETRY AND SPATIAL SENSE