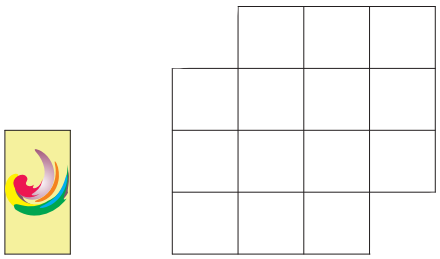
KWANTLEN POLYTECHNIC UNIVERSITY

Mathematics Problem of the Week

Problem Number: 283

Tiling a Floor

Sally wants to tile part of her bathroom. The part that needs tiling and the shape of new tiles that she likes are shown in the figure below.



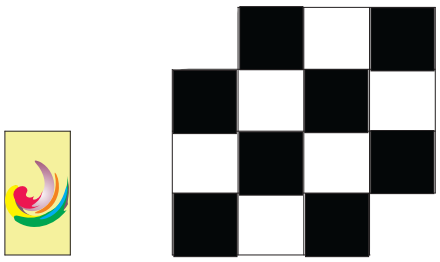
New tile

The area that needs tiling

Can she tile the floor without having to break any tiles in halves?

Solution: No, she cannot tile the floor without having to break any tiles in pieces.

To show this, we colour the squares black and white as shown in the figure. Each tile, no matter how/where it is placed, covers one black and one white square. If she were able to tile the floor, then the number of the black and white squares must have been equal - which clearly is not the case as there are six white squares and eight blacks.



Winner: This week winner was Shen (Kirby) Enguang. Congratulations Kirby!