

CAN WE ADD YOUR NAME TO THE LIST?



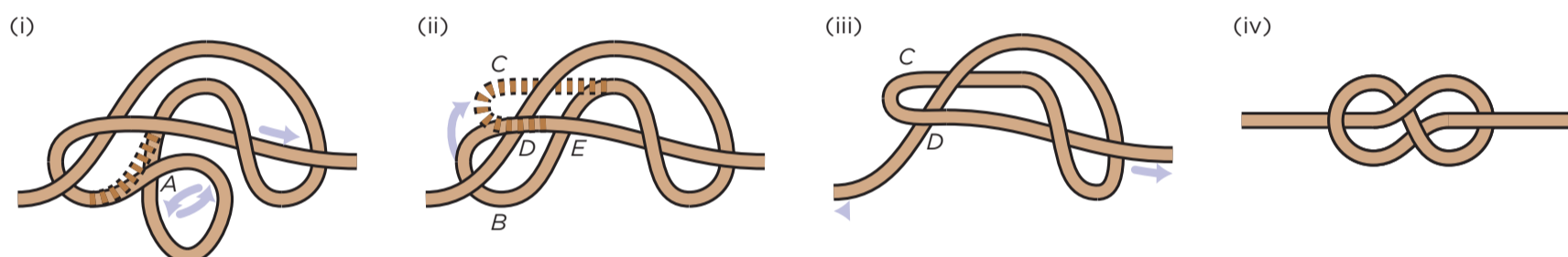
SOLUTIONS

TAKE A TICKET

Half of 777 is $388\frac{1}{2}$, so my neighbour and I had tickets 388 and 389. The next ticket was then number 390.

A KNOTTY PROBLEM

We untangle the knot as far as possible, as follows.



In (i), uncross the loop at A then tighten to take up the slack. In (ii), move B around the back towards C, creating (iii). Finally, tighten and reshape the knot, as in (iv), hence (D).

MINI HEX

Alternative 1

The smaller hexagon is adjacent to 3 equilateral triangles. Consequently the side of the larger hexagon is 3 times the side of the smaller hexagon. Then the ratio of areas is 9:1.

Alternative 2

Divide the whole diagram into identical equilateral triangles. The small hexagon is covered by 6 of these. The large hexagon can first be divided into 6 large equilateral triangles and each of these can then be divided into 9 small triangles. So the large hexagon is covered by 9×6 small triangles. This is 9 times as many as the small hexagon.



SCAN TO TRY MORE PROBLEMS!

KSF.

Kangourou Sans Frontières
Thursday 17 March

AMC.

Australian Mathematics
Competition
Wednesday 3 to
Friday 5 August

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