Kwantlen Polytechnic University

Mathematics Problem 273:

This week's winner is: Navdeep Singh

Contact Tariq Nuruddin at Surrey MAC for your prize or email MathProblem@kpu.ca**.**

Also submitting correct solutions to problem 273 were James Guerry, Jiajun Zhang, and Kirby

The turn of a friendly card

Solutions provided by James Guerry

We assume that the numbers at the end of each row and column are the sums of their respective row or column. Consider the second row $(S + H + D + H = 3)$ and the fourth column $(D + H + D + H = 2)$.

Subtracting the two equations we find:

$$(S + H + D + H = 3) - (D + H + D + H = 2) = (S - D = 1)$$

$$S = D + 1$$

Consider the third column $(S + D + S + S = 13)$. Substituting for S yields:

$$(D + 1) + D + (D + 1) + (D + 1) = 13$$

$$4D + 3 = 13$$

$$D = 2.5$$

Therefore,

$$S = D + 1 = 3.5$$

Consider the fourth column again:

$$D + H + D + H = 2$$

$$2H + 5 = 2$$

$$H = -1.5$$

Finally, consider the first column:

$$H + S + D + D = ?$$

$$-1.5 + 3.5 + 2.5 + 2.5 = 7$$

Therefore, 7 should replace the question mark.