| Cross Totals | Rubric |  |  |
| :---: | :---: | :---: | :---: |
|  |  | Points | Section points |
| Gives correct answers: <br> Possible totals are 23, 24, 25, 26, (27) <br> Partial credit <br> Gives 3 more correct totals <br> Gives 2 more correct totals <br> 23 is smallest possible total with 1 in the middle square. <br> 27 is biggest possible total with 9 in the middle square. <br> An even number in the middle square is impossible. <br> Proof <br> Gives correct reasons such as: <br> The total for numbers 1 through 9 is 45 . <br> If the the magic total is $T$, say <br> $2 \mathrm{~T}=45+$ the middle number. <br> So, the middle number must be odd , that is $1,3,5,7$ or 9 <br> These middle numbers are all possible. |  | 3 <br> (2) <br> (1) <br> 1 <br> 1 <br> 1 <br> 4 | 10 |
|  | Total Points |  | 10 |

