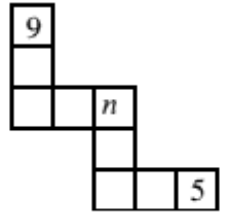




10. The digits 1, 2, 3, 4, 5, 6, 7, 8, and 9 are to be written in the squares so that every row and every column of three squares has a total of 13. Two numbers have already been entered. What is the value of  $n$ ?

- A 2                      B 4                      C 6                      D 7                      E 8

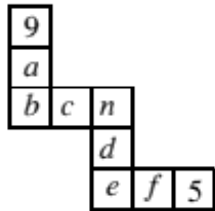


0680



©UKMT

10. **B** Let  $a, b, c, d, e, f$  be the numbers in the squares shown. Then the sum of the numbers in the four lines is  $1 + 2 + 3 + \dots + 9 + b + n + e$  since each of the numbers in the corner squares appears in exactly one row and one column. So  $45 + b + n + e = 4 \times 13 = 52$ , that is  $b + n + e = 7$ . Hence  $b, n, e$  are 1, 2, 4 in some order.



If  $b = 2$  then  $a = 2$ ; if  $b = 4$  then  $a = 0$ . Both cases are impossible, so  $b = 1$  and  $a = 3$ .

This means that  $n = 2$  or  $n = 4$ . However, if  $n = 2$  then  $c = 10$ , so  $n = 4$  and  $c = 8$ .

(The values of the other letters are  $e = 2, d = 7, f = 6$ .)