# october 2020 <br> PUZZLEB©MB SOLUTIONS 

# KACLUERO 

|  |  |  |  |  | a b |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | c | d |  | e ${ }^{\text {f }}$ | 6 | 4 |
| 8 | 8 | 7 | h ${ }^{\text {i }}$ | 1 | 2 | 3 |
| i | 7 | 6 | 5 | 2 | k | 1 |
|  | m | $\bigcirc$ | 7 | 4 | 9 | 8 |
| p | 1 | 4 | 9 | 9 | 7 | 9 |
| r | 7 | 8 |  |  |  |  |

## Solution path:

Sum of digits (e) can't be 200+, so (i) must start with 1, and so can only be 123. Of the two-digit powers of 2 for (f), 16 doesn't give a prime at (b) and 32 would mean (a) = (f), so (f) has to be 64.

We know (p) must be the digits $1,4,9$ in some order. Since (m) is at most 22 (the number of spaces in the grid), (p) is 149 or 194. If it's 194 there's no answer for ( n ), so (p) is 149 .

Now (h) must be 579; (n) must be 42 or 48 , but ( $r$ ) doesn't work if it's 42 , so ( $n$ ) is 48 and therefore $(r)$ is 78.
$(m)$ tells us there are five 7 s in the solved puzzle, ie three more. We only have three across answers where more 7 s can go - (g), (j) and (q) - so each must have a 7.
(j) has its digits in decreasing order, and because of (d) its second digit is not a 7 , so its first digit is a 7. (g) must end in a 7 (as it has to contain a 7, but (c) cannot have two 7s). The only digit that works in the (g)/(c) intersection for both clues is 8 . The second digit of ( j ) can only be 6 .

Consider the sum of all digits in the finished puzzle (ie the value of (e)), minus the last digit of (e). It must end in 0 . The digits already in the grid add to 85 , so the remaining five other than the last digit of (e) must add to a total ending in 5. The highest possible such total for five digits is 35 . But 15 and 25 wouldn't work, as they would lead to the second digit of (e) being 0 or 1 . So the total is exactly 35 , and the second digit of $(e)$ is 2 (meaning the four digits making up (k) and (I) add to 33. Those four digits must be 9,9,8 and 7 , which only fit in if $(\mathrm{k})$ is 97 and $(\mathrm{l})$ is 89 .

Finally, as one digit of (o) must be half of one other, the remaining digit must be a 4


