

Name & Surname: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_

 Grade 4 & 5 2025 # 23 Hand in by Thurs 14 August

Two problems

1. Six boys share a flat with two bathrooms which they use every morning beginning at 7:00 o'clock. In each bathroom there is never more than one person at any one time. The times they spend in the bathroom are 8, 10, 12, 17, 21 and 22 minutes.

What is the earliest time that they can finish using the bathrooms?

The total amount of time spent in the bathroom is 90 minutes. It would be ideal if some of the numbers added up to 45, but the best we can get is 44 ($22+12+10)$ and 46 ($8+17+21)$.

Thus, the earliest they can be finished is 07:46

1. Janet enters all the digits from 1 to 9 in the cells of a 3 x 3 table, so that each cell contains one digit. She has already entered 1, 2, 3 and 4, as shown. Two numbers are considered to be 'neighbours' if their cells share an edge. After entering all the numbers, she notices that the sum of the neighbours of 9 is 15.

What is the sum of the neighbours of 8?

|  |  |  |
| --- | --- | --- |
| 1 | 5 | 4 |
| 6 | 8 | 9 |
| 2 | 7 | 3 |

 5, 6 and 7 can swap places with each other

 Sum of the neighbours of 8 is $5+6+7+9=27$