

# Problems

October 25, 2023

- Each of the letters in the base-10 addition below represent a digit. What is  $A + W + A + Y$ ?
- There were  $n$  people in a room, with names  $A_1, A_2, \dots, A_n$ , where each person  $A_m$  said at least  $m$  of them were lying:

$$\begin{array}{r} 875 \\ + 875 \\ + 875 \\ \hline 2625 \end{array}$$

$A_1$ : At least 1 of us are lying.

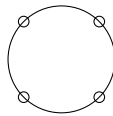
$A_2$ : At least 2 of us are lying.

$\vdots$

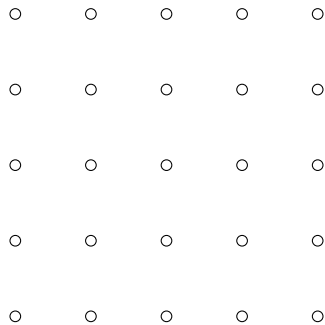
$A_{n-1}$ : At least  $n - 1$  of us are lying.

$A_n$ : At least  $n$  of us are lying.

- A circle covers 4 points in a  $2 \times 2$  square:



Cover the 25 points in the  $5 \times 5$  square below with 5 circles.



Eve, Felix, Glenna and Henry each made a statement:

Eve: There were 4 people in the room.

Felix: There were 5 people in the room.

Glenna: There were 9 people in the room.

Henry: There were 14 people in the room.

Who are lying?