

# Lasers

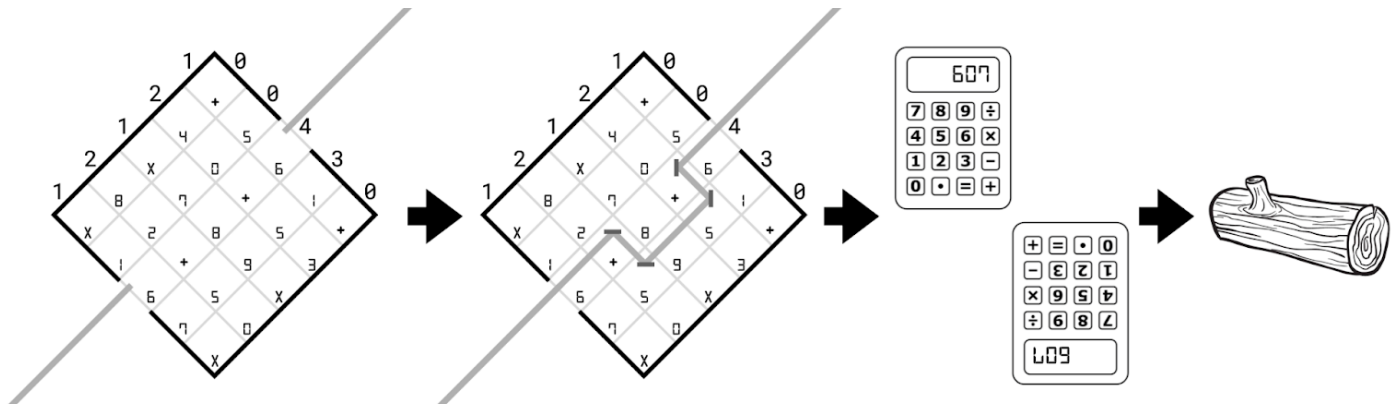


*Lasers only exist because of Quantum Physics!*

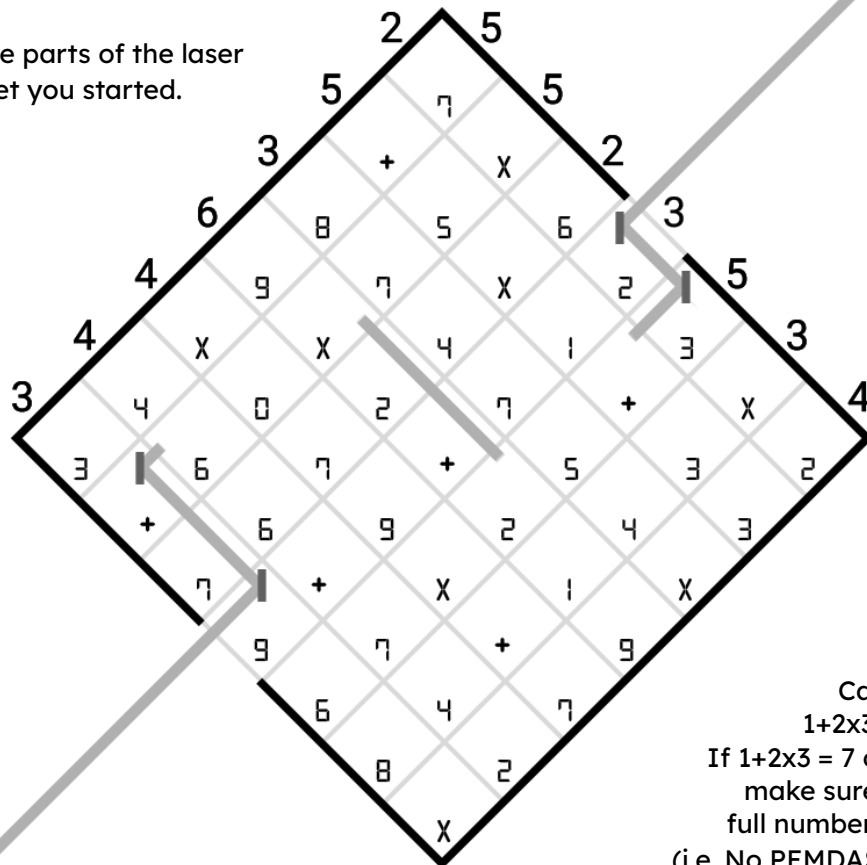
In the large optical chamber shown at the bottom of this page, a laser beam passes through an open port in the chamber walls, reflects off some horizontal and vertical mirrors (0 or 1 per cell), and exits through the other port. The laser beam does not cross itself in the chamber or reflect off of a mirror more than once.

The numbers outside the chamber indicate how many cells in the diagonal column below the number have the laser beam passing through it.

Can you **calculate** the path of the laser beam, **step by step**? The smaller optical chambers immediately below this text provide an example to show you how.



Four mirrors and some parts of the laser beam are shown to get you started.



Calculating step-by-step,  
 $1+2 \times 3 = 9$  on old calculators!  
 If  $1+2 \times 3 = 7$  on your calculator app,  
 make sure you hit "=" after each  
 full number before pressing + or x  
 (i.e. No PEMDAS, for you mathy folks).