

# The escape

A prisoner sits in his cell planning his escape. The prisoner is kept in by 5 laser beams, which operate along a corridor. Each laser is switched off at a **specific time interval** for just long enough to allow a person to walk through. The time between being switched off for each laser is shown below:

Laser One = every 3 minutes

Laser Two = every 2 minutes

Laser Three = every 5 minutes

Laser Four = every 4 minutes

Laser Five = every 1 minutes

The guard patrols and checks the prisoner each time all the laser beams are off simultaneously. Because each laser only switches off for a short time the prisoner knows he can only get past one laser at a time. He has to get past the five lasers from 1 to 5 in order. Laser One is at the entrance of the prisoner's cell and laser Five is at the door to the outside. He also knows that if he spends longer than 4 minutes 12 seconds in the corridor an alarm will go off.

Can the prisoner escape without the alarm in the corridor going off?

If he can escape, how many minutes should he wait before passing Laser One?

How much time will he have after passing Laser Five before the guard raises the alarm?

