

## Main problem 1



Four of the team have escaped. They have one torch left between them.

They have reached a dilapidated rope bridge across the river.

They estimate that the guards and their dogs are about 15 minutes behind them.

It is obvious that the rope bridge can hold at most two people at a time.

It is dark and dangerous, so the torch has to be used by whoever is going across.

The group leader can cross the bridge in 1 minute, as he is skilled in rainforest survival - the second in command will take 2 minutes - it will take 5 minutes for the third team member as he is scared of heights and the fourth team member will take 8 minutes because she has twisted her ankle badly during the escape.

When two people cross the bridge together, they must move at the slower person's pace.

Can all four of them get across the bridge in 15 minutes or less?

How will you communicate the plan to the rest of the team?

Talking will alert the guards but you can text on your mobile phone.

You need to be as brief as possible - time is of the essence!

### Supplementary or homework problem

Another group of four has reached a different part of the river.

They have found an abandoned canoe with a paddle and are keen to use it to cross the water but the canoe is old and battered and can't carry much weight.

The group agree that if they try to put more than 100kg in the canoe it is likely to sink.

The group leader, with his rucksack, weighs 90 kg and the other three weigh 80kg, 60kg and 40 kg.

They have an extra single 20 kg pack of equipment which contains their computers and cameras and their report for the UN, which they must not leave behind.

They need to get across the river as quickly as possible.

How are they going to do it? How many crossings will it take?