



Problem of the Week

Problem C

Red, Blue, Green, Repeat

Tosia uses instructions to control three different-coloured lights. The instructions can turn each light on or off, and also wait for a specific amount of time before moving on to the next instruction. Tosia writes the following set of instructions and has them run 10 times in a row.

```
turn red light on
wait(3sec)
turn blue light on
turn green light on
wait(5sec)
turn green light off
wait(2sec)
turn green light on
turn red light off
wait(2sec)
turn green light off
turn blue light off
```

- (a) How long does it take for the instructions to run completely 10 times from start to finish? Assume that it doesn't take any time at all to turn the lights on and off.
- (b) Which lights are on exactly 33 seconds after the instructions start?

