



Lewis & Clark College

Department of Mathematical Sciences

Problem of the Week #11 (Spring 2018)

Security agent Alice is hot on the trail of network hacker Bob, who is hiding in one of 17 caves. The caves form a linear array, and every night Bob moves from the cave he is in to one of the caves on either side of it. Alice can search two caves each day, with no restrictions on her choice.

For example, if Alice searches $(1\ 2)$, $(2\ 3)$, ..., $(16\ 17)$, then she is certain to catch Bob, though it might take her 16 days.

What is the shortest time in which Alice can be guaranteed of catching Bob?

- Solvers should include their name, address, and status at the College. Solutions can be mailed to MSC 110 via campus mail or placed in Yung-Pin Chen's mailbox in the Math Department Office. Solutions to the above *Problem of the Week* should be received by 5:00 p.m. Monday, April 16, 2018.
- We did not receive a solution for *Problem of the Week* #10.