Solutions
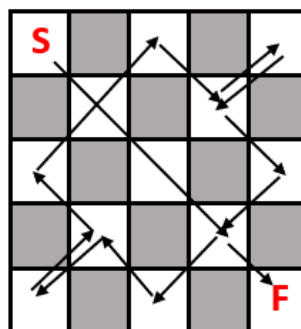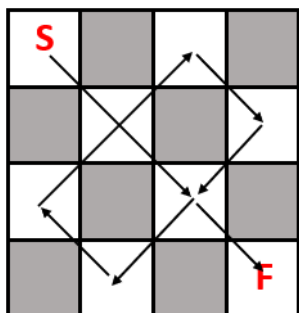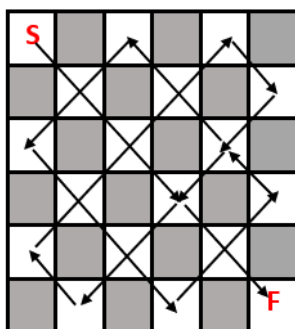
Note – there are many different solutions - you may have a different one.

4 by 4: This solution has 7 lines.

5 by 5: This solution has 13 lines. With an odd number, it is impossible to avoid going back over a line since the white corner squares have only one route in and out.

6 by 6: This solution has 13 lines.

8 by 8: This solution has 17 lines.