

**AQA – Statistical hypothesis testing – A2 Mathematics P3****1. June/2021/Paper\_7357/3/No.15**

A team game involves solving puzzles to escape from a room.

Using data from the past, the mean time to solve the puzzles and escape from one of these rooms is 65 minutes with a standard deviation of 11.3 minutes.

After recent changes to the puzzles in the room, it is claimed that the mean time to solve the puzzles and escape has changed.

To test this claim, a random sample of 100 teams is selected.

The total time to solve the puzzles and escape for the 100 teams is 6780 minutes.

Assuming that the times are normally distributed, test at the 2% level the claim that the mean time has changed.

**[7 marks]**