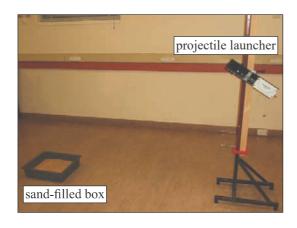
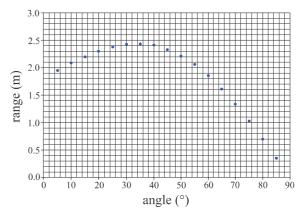
Two students perform a projectile motion experiment to find the launch angle that will result in the maximum range when the launch height of a projectile is above the ground. They launch a small metal ball from a projectile launcher set at a number of different launch angles. They measure the range using a sand-filled box placed at a position on the ground where they predict the ball will land. The students' experimental apparatus and their results are shown in the photograph and graph below:





- Discuss the variables in this experiment, clearly identifying the independent and dependent variables and at least *one* variable, other than launch height, that must be held constant.
- Using the graph, state the launch angle that results in the maximum range in this experiment, and explain why changing this angle decreases the range of the metal ball.

 (16 marks)

