Question 20

Marks

Question 20 (3 marks)

A student is investigating inertial and non-inertial frames of reference. The student carries out a series of activities on a boat floating on a large, calm lake. The boat remained level during these activities. **3**

Each activity and the student's observed results are recorded in the table.

Activity	*Observation*
Dropped a ball from a set height	Ball fell vertically with increasing velocity
Rolled a ball from one side of the boat to the other	Ball rolled across the floor with a constant velocity
Rolled a ball from the back of the boat towards the front of the boat	Ball rolled across the floor with a constant velocity

Justify the student's conclusion that: 'The boat can be regarded as an inertial frame of reference'.

The boat can be regarded as an inertial frame of reference, as the experients were carried out while the boat was stationary and all results went as expected.