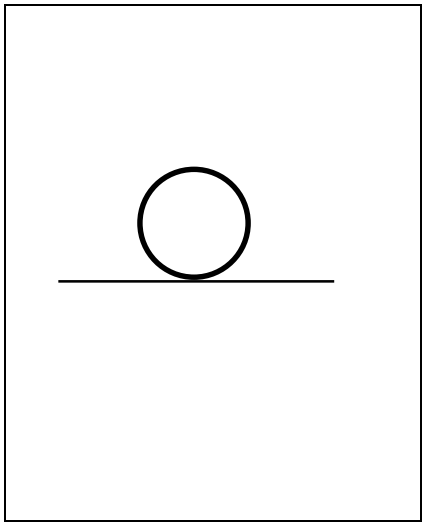
Ex 3 Hitting a golf ball

1 The diagram shows a golf ball sitting on the ground before Leigh hits it.
On the diagram mark in and label **two forces which are equal in magnitude and opposite in direction in accordance with Newton's Third Law of motion**.

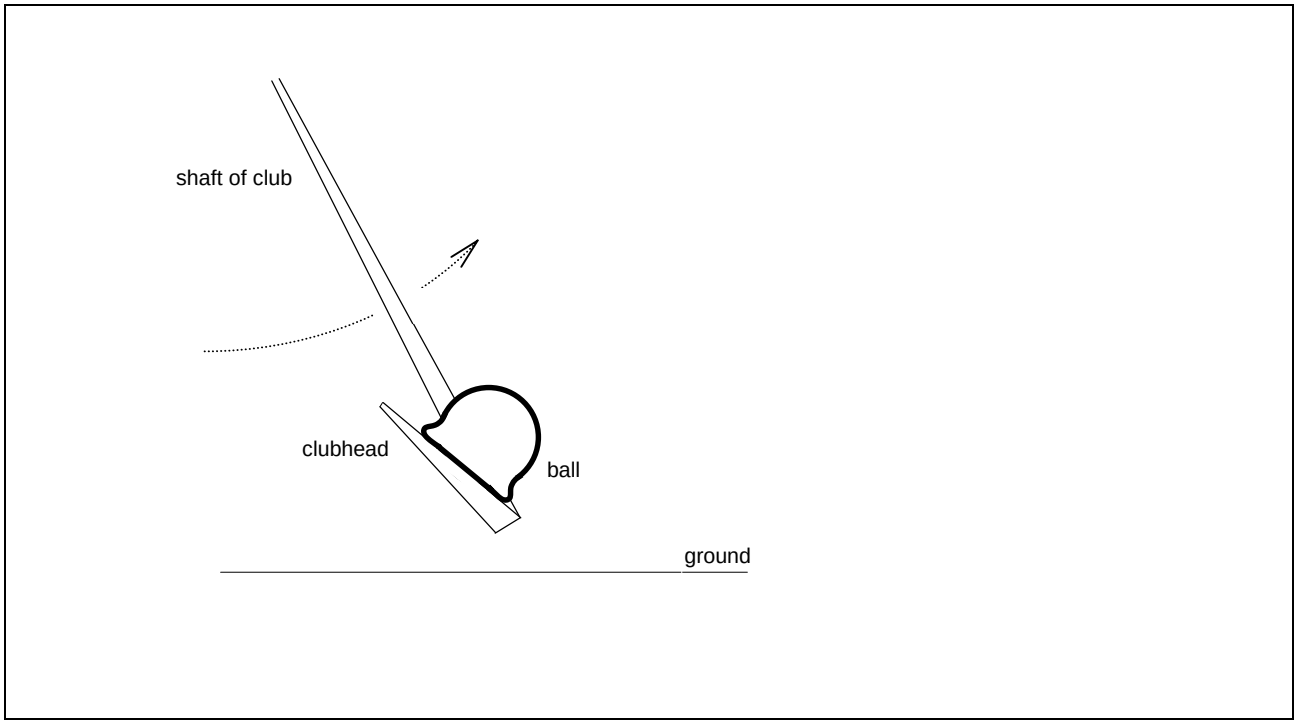


Represent forces
- By drawing lines with arrowheads, e.g. ⟶
- with the **length** of the line representing the **size** of the force,
- with the same scale for all forces,
- using as large a scale as possible,
- with the **tail** of each force at the point where the force acts, and
- labelling forces, e.g. the force exerted **on** the Ball (**B**) **by** the **G**round (**G**) would be labelled $\mathbf{F_{BG}}$.

2 Before Leigh hits the ball he thinks:
"According to Newton's Third Law the clubhead will exert a force on the ball and the ball will exert an equal and opposite force on the clubhead. Therefore the net force is zero, and the ball should not move. But I know it will!"

The diagram below shows the clubhead in contact with the ball as the clubhead swings through. Mark in and label **all the forces acting on the ball**.

Use the conventions in the shaded box above.



3 *If time permits*, can you see what is wrong with Leigh's thinking (above)?