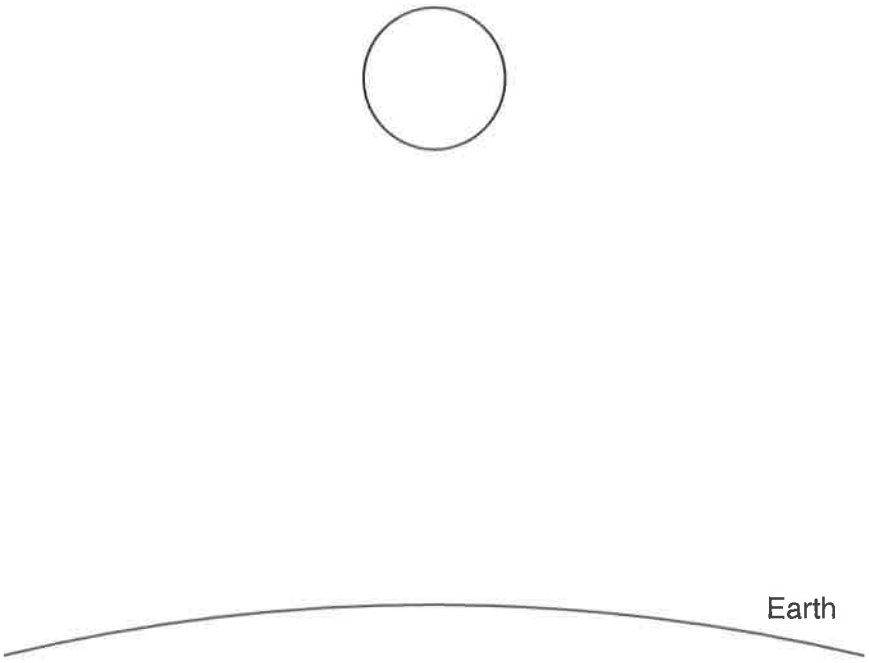
2 A full statement of Newton's third law of motion is

> "If body A exerts a force on body B then body B exerts an equal and opposite force of the same type on body A."

Each of the following diagrams shows situations where forces are acting on a ball. On each diagram add arrows to represent *direction* and *magnitude* of each force acting on the ball and its equal and opposite force.

Label each force acting as either a *gravitational* force or a force of *contact*.

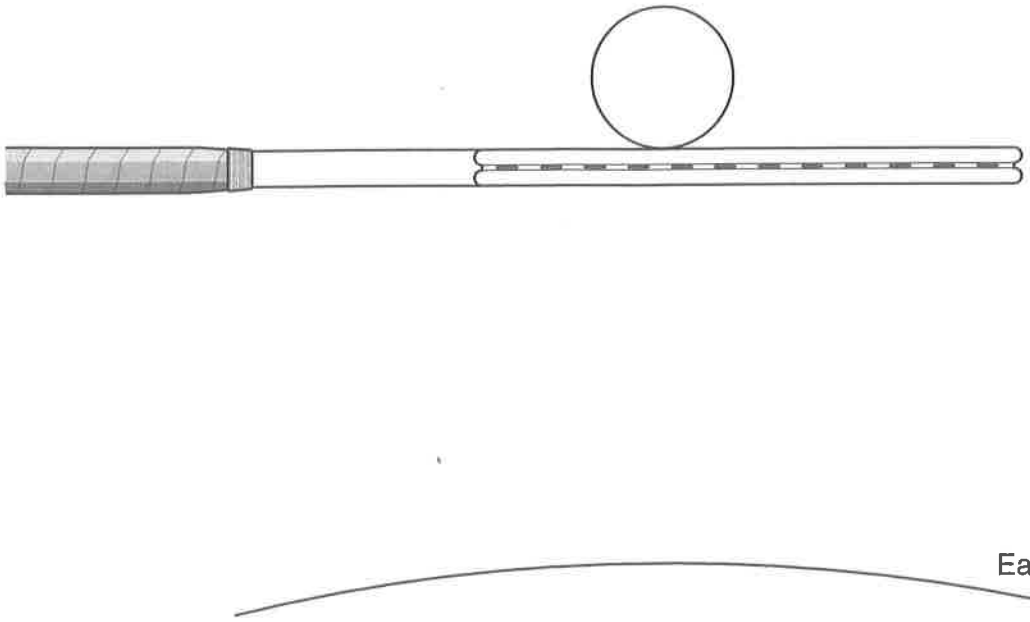
(a) A ball is falling freely towards the Earth as shown in Fig. 2.1 (not to scale).



[2]

Fig. 2.1

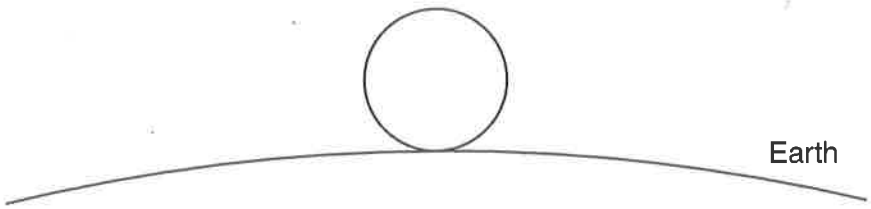
(b) A ball is being hit upwards by a racket as shown in Fig. 2.2 (not to scale).



[3]

Fig. 2.2

(c) A ball is resting on the ground as shown in Fig. 2.3 (not to scale).



[3]

Fig. 2.3