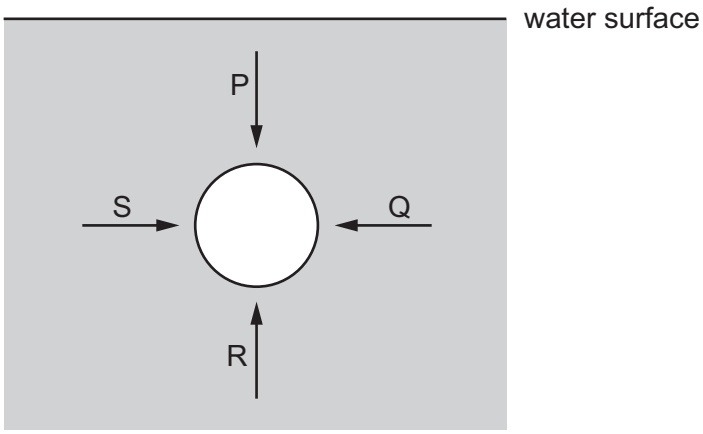
**13** The diagram represents a sphere under water. P, Q, R and S are forces acting on the sphere due to the pressure of the water.




Each force acts perpendicularly to the sphere's surface. P and R act in opposite directions vertically. Q and S act in opposite directions horizontally.

Which information about the magnitudes of the forces is correct?

**A** $P < R$ and $S = Q$

**B** $P > R$ and $S = Q$

**C** $P = R$ and $S = Q$ and $P < S$

**D** $P = R$ and $S = Q$ and $P = S$

**14** The first column in the table gives four examples of work being done. The second column gives more detail of the action.

Which row is **not** correct?

| | example | detail |
|---|---|---|
| **A** | a girl dives from a diving board into a swimming pool | work is done by the girl against the gravitational field as she falls |
| **B** | a man pushes a car along a level road | work is done by the man against friction |
| **C** | an electron is accelerated towards a positively charged plate | work is done on the electron by the electric field of the plate |
| **D** | a piston is pushed outwards as a gas expands | work is done on the atmosphere by the gas |