3.8 **a** Write the equation that links moment, force and distance. **[1]**

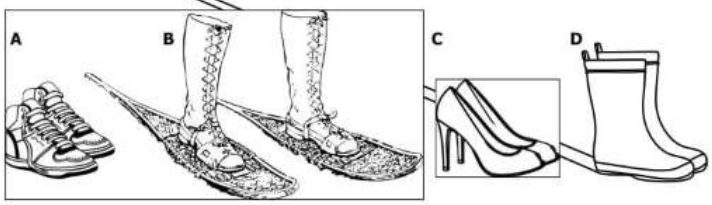
b Arun is trying to turn a nut with a spanner.

Arun exerts his maximum force on the spanner, but the nut will **not** turn.

Explain why Arun can make the nut turn if he uses a longer spanner. **[2]**

3.9 **a** Write the equation that links pressure, force and area. **[1]**

b The picture shows four different types of shoes.



Give the letter of:

i the shoes that will be best for **not** sinking in snow **[1]**

ii the shoes that could make holes in a soft wood floor. **[1]**

Which statement is true about a liquid? **[1]**

Write **one** letter.

A Pressure increases with depth.

B Pressure decreases with depth.

C Pressure does not depend on depth.

D There is no pressure in a liquid.

Write down **two** variables that will increase the speed of diffusion in a gas. **[2]**

Check your progress

3.1 An object has balanced forces acting.

Which of these describes the movement of the object? **[1]**

Give **two** letters.

A The object could be moving at a constant speed in a straight line.

B The object could be moving at a constant speed in a circle.

C The object could be stationary.

D The object could be getting faster in a straight line.

3.2 Describe the effects of the unbalanced forces on each of these objects.

a A bicycle is moving in a straight line. There is an unbalanced force opposite to the direction the bicycle is moving. **[1]**

b A car is moving in a straight line. There is an unbalanced force in the same direction as the car is moving. **[1]**

c A ball is moving in a straight line. There is an unbalanced force sideways to the direction the ball is moving. **[1]**

3.3 Which of these is the standard unit of speed used by scientists? **[1]**

Write **one** letter.

A km/h

B m/s

C N/cm^2

D Nm

3.4 Marcus goes running. After some time, Marcus gets tired and starts walking. Marcus does **not** stop.

Sketch a distance–time graph for Marcus. **[3]**

3.5 A train travels a distance of in at a constant speed.

a Draw a distance–time graph for the train. **[4]**

b Calculate the speed of the train. Show your working and give the unit with your answer. **[3]**