

Questions are for both separate science and combined science students**Q1.**

Hailstones are small balls of ice. Hailstones form in clouds and fall to the ground.

- (a) Explain the difference in the maximum kinetic energy of a hailstone with a mass of 10 g and a hailstone with a mass of 20 g.

(3)

- (b) The kinetic energy of a hailstone is measured in joules.

Which of the following is the same as 1 joule?

Tick (✓) **one** box.

1 N m

1 N/m

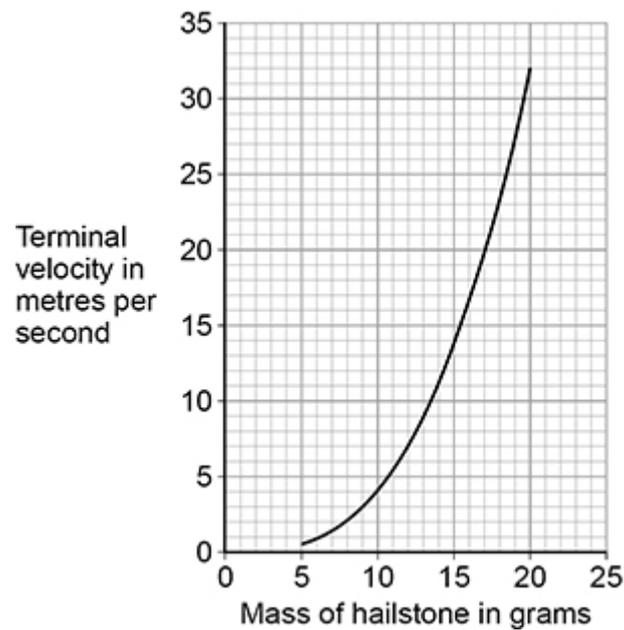
1 N/m²

1 N m²

(1)

Figure 2 is repeated below.

Figure 2



- (c) A hailstone hit the ground at its terminal velocity of 25 m/s.

The hailstone took 0.060 s to stop moving.

Determine the average force on the hailstone as it hit the ground.

Use information from **Figure 2**.

Use the Physics Equations Sheet. **(HT only)**

Average force = _____ N

(3)

(Total 7 marks)