OCR
Oxford Cambridge and RSA

GCSE Physics B (Twenty First Century Science)

J259/01 Breadth in Physics (Foundation Tier)

Question Set 36

1 Amaya and Li measure the speed of sound in air:

- Amaya stands 30 m away from Li;
- Amaya claps her hands;
- Li starts a timer when he sees the clap;
- Li stops the timer when he hears the sound.

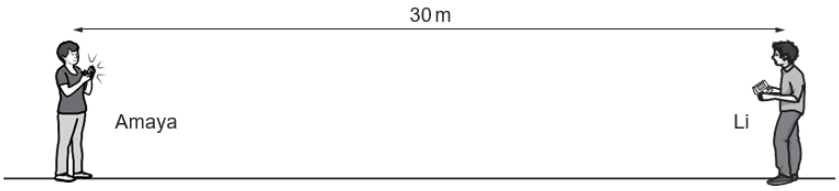

Table 9.1 shows their results.

Attempt	Time (s)	Calculated speed (m/s)
1	0.32	94
2	0.44	68
3	0.37	81
4	0.49	61
5	0.40	

Table 9.1

(a) Calculate the speed of sound for Attempt **5**.

Use the equation: speed = distance ÷ time

Speed = 30/0.4 = 75m/s

Speed = 75 m/s **[2]**

(b) The expected value for the speed of sound in air is about 300 m/s.

(i) State why the data in **Table 9.1** is inaccurate. **[1]**

Results are much lower than 300m/s

(ii) State why the data in **Table 9.1** is imprecise. **[1]**

Wide range of results

(c) **(i)** Describe one improvement to the method. **[1]**

Increase the distance

(ii) State how your improvement in **(c)(i)** will produce better data. **[1]**

Reduces % uncertainty

Total Marks for Question Set 36: 6