FREE REVISION PACK

# Longitudinal & Transverse Waves

Pearson Edexcel International Advanced Level Physics · Unit 2 (WPH12) · Specification points 35–38

Easy | Multiple choice · past-paper questions

| 5 | 5 | ≈ 10 min |
|---|---|---|
| QUESTIONS | TOTAL MARKS | SUGGESTED TIME* |

## Contents


| Q | LEVEL | FOCUS | SOURCE | MARKS |
|---|---|---|---|---|
| 1 | Easy | Wavelength of a longitudinal wave | Edexcel IAL October 2025 · Unit 2 · Q2 | 1 mark |
| 2 | Easy | Pressure in compressions and rarefactions | Edexcel IAL January 2023 · Unit 2 · Q8 | 1 mark |
| 3 | Easy | Displacement at compressions and rarefactions | Edexcel IAL October 2022 · Unit 2 · Q4 | 1 mark |
| 4 | Easy | Finding compressions on a displacement–distance graph | Edexcel IAL October 2021 · Unit 2 · Q10 | 1 mark |
| 5 | Easy | Where displacement is a minimum in a longitudinal wave | Edexcel IAL June 2021 · Unit 2 · Q7 | 1 mark |


**Key ideas to have ready**

- Transverse: oscillations perpendicular to the direction of travel. Longitudinal: parallel to it (e.g. sound).
- Longitudinal waves have compressions (high pressure) and rarefactions (low pressure).
- At the centre of a compression or a rarefaction, particle displacement is zero.
- Wavelength = distance between neighbouring compressions.

**How to use this pack**

1. The questions are grouped into levels (Easy). Work through them in order, and check your answers at the end of each level before moving on.
2. Every question is multiple choice with one correct answer. Write down your working anyway; that is how you find mistakes.
3. The separate mark scheme uses the same numbers and explains every answer.

Levels are based on how students did in Pearson's examiner reports where that information exists, plus our own difficulty rating. *About 1.5 minutes per question.

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## Easy

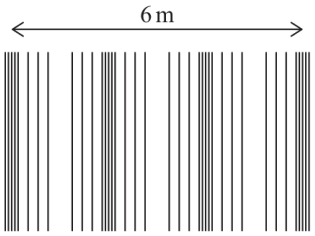
Definitions and one-step ideas. Most students get these right.

Questions 1–5

Choose **one** answer for each question and put a cross in the box next to it.

Edexcel IAL October 2025 · Unit 2 · Q2

**1** The diagram represents a longitudinal wave.




Which of the following is the wavelength of the wave?

- ☒ **A** 2 m
- ☒ **B** 3 m
- ☒ **C** 4 m
- ☒ **D** 6 m

Edexcel IAL January 2023 · Unit 2 · Q8

**2** When longitudinal waves pass through a material, compressions and rarefactions are formed.

Which of the following statements is correct?

- ☒ **A** Compressions are points where the displacement of particles is a maximum.
- ☒ **B** Compressions are points where the pressure is a minimum.
- ☒ **C** Rarefactions are points where the displacement of particles is a minimum.
- ☒ **D** Rarefactions are points where the pressure is a minimum.

Edexcel IAL October 2022 · Unit 2 · Q4

**3** Two students are discussing longitudinal waves.

**Student 1** states that at the centre of a compression the displacement of molecules is zero.

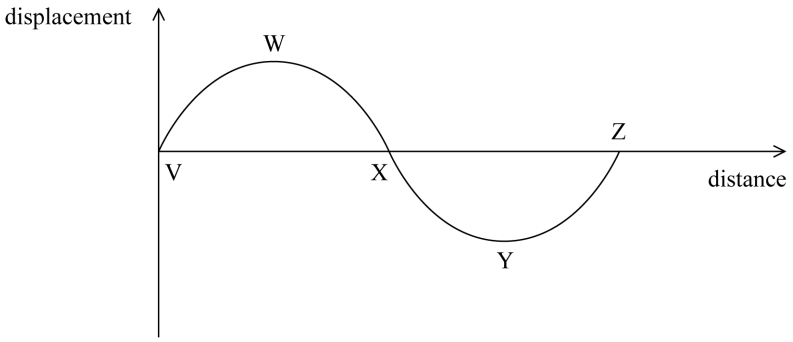
**Student 2** states that at the centre of a rarefaction the displacement of molecules is zero.

Which of the students' statements are correct?

- ☒ **A** Both
- ☒ **B** Neither
- ☒ **C** Only student 1
- ☒ **D** Only student 2

Edexcel IAL October 2021 · Unit 2 · Q10

**4** A sound wave travels through air. The diagram represents the displacement of air particles along the wave at an instant in time.




There is a compression at position V.

At which position is there also a compression?

- ☐ **A** W
- ☐ **B** X
- ☐ **C** Y
- ☐ **D** Z

Edexcel IAL June 2021 · Unit 2 · Q7

**5** Which of the following statements is correct for minimum displacement of the particles in a longitudinal wave?

- ☐ **A** Minimum displacement occurs at compressions only.
- ☐ **B** Minimum displacement occurs at rarefactions only.
- ☐ **C** Minimum displacement occurs at compressions and rarefactions.
- ☐ **D** Minimum displacement occurs at neither compressions nor rarefactions.

**End of questions.** Check your answers with the matching mark scheme. More free packs and 1-to-1 tuition: **www.getbetteratphysics.co.uk**