FREE REVISION PACK

Newton's Laws of Motion

Pearson Edexcel International Advanced Level Physics · Unit 1 (WPH11) · Specification points 8–10, 12

Easy | Hard | Multiple choice · past-paper questions

5	5	≈ 10 min
QUESTIONS	TOTAL MARKS	SUGGESTED TIME*

Contents

Q	LEVEL	FOCUS	SOURCE	MARKS
1	Easy	What is always true of a third-law pair	Edexcel IAL October 2025 · Unit 1 · Q3	1 mark
2	Easy	Newton's second law in an accelerating lift	Edexcel IAL June 2019 · Unit 1 · Q10	1 mark
3	Easy	Drag on an object accelerating upwards	Edexcel IAL January 2025 · Unit 1 · Q9	1 mark
4	Easy	Newton's third law pair on a table	Edexcel IAL October 2019 · Unit 1 · Q7	1 mark
5	Hard	Motion of a rocket in orbit with engines off	Edexcel IAL June 2019 · Unit 1 · Q2	1 mark

Key ideas to have ready

- First law: zero resultant force ⇔ constant velocity (or at rest).
- Second law: resultant force = ma. Find the resultant first (take a direction as positive).
- Third law: a pair of forces of the same type, equal and opposite, acting on **different** objects.
- Weight W = mg; g is the gravitational field strength (force per unit mass).

How to use this pack

1. The questions are grouped into levels (Easy and Hard). 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 1–4

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

Edexcel IAL October 2025 · Unit 1 · Q3

1 Which of the following is **always** true of the forces in a Newton's third law pair?

- ☒ **A** The forces act on the same object.
- ☒ **B** The forces act in the same direction.
- ☒ **C** The forces cause acceleration.
- ☒ **D** The forces have the same magnitude.

Edexcel IAL June 2019 · Unit 1 · Q10

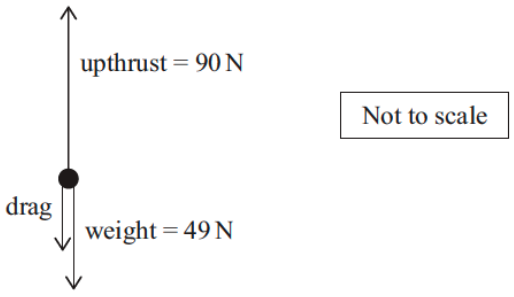
2 A lift moves upwards from rest with an acceleration a. A student of mass 70 kg standing in the lift exerts a force of 800 N on the floor of the lift.

Which of the following expressions could be used to determine a?

- ☒ **A** $70g = 70a$
- ☒ **B** $800 = 70a$
- ☒ **C** $800 - 70g = 70a$
- ☒ **D** $70g - 800 = 70a$

Edexcel IAL January 2025 · Unit 1 · Q9

3 A free-body force diagram for an object moving through a fluid is shown.



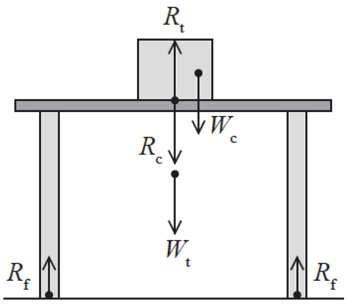
The mass of the object is 5 kg.
The object is accelerating upwards at 4 m s^{-2}.

Which of the following gives the magnitude of the drag force in newtons?

- ☒ **A** 5×4
- ☒ **B** $90 - 49$
- ☒ **C** $90 - 49 - (5 \times 4)$
- ☒ **D** $90 - 49 + (5 \times 4)$

Edexcel IAL October 2019 · Unit 1 · Q7

4 A uniform solid cube is placed on a table. The diagram shows the forces acting on the table and on the cube.



R_c = reaction force of cube on table
R_f = reaction force of floor on table
R_t = reaction force of table on cube
W_c = weight of cube
W_t = weight of table

The table has four legs.

Which of the following statements is correct according to Newton's third law?

☒ **A** $4R_f = R_c + R_t$

☒ **B** $4R_f = R_c + W_t$

☒ **C** $R_c = R_t$

☒ **D** $R_t = W_c$

Hard Several steps, often with a trap built in. Fewer than 3 in 10 students get these right. **Question 5**

Edexcel IAL June 2019 · Unit 1 · Q2

5 Once in orbit above the Earth's atmosphere, the engines on a space rocket are switched off.

Which row of the table correctly states the resulting motion of the rocket and the law explaining this motion?

	Motion of rocket	Explanation
☒ **A**	uniform velocity	Newton's 2nd law
☒ **B**	uniform velocity	Newton's 3rd law
☒ **C**	changing velocity	Newton's 2nd law
☒ **D**	changing velocity	Newton's 3rd law

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