

Physics A Level

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$\int \sin x dx$	3	4	10	200	126
$\int \sin x dx$	-1	-1	-1	-1	-1
$\int \cos x dx$	1	1	1	1	1
$\int \tan x dx$	-ln cos x	-ln cos x	-ln cos x	-ln cos x	-ln cos x
$\int \cot x dx$	ln sin x	ln sin x	ln sin x	ln sin x	ln sin x
$\int \sec x dx$	ln sec x + tan x	ln sec x + tan x	ln sec x + tan x	ln sec x + tan x	ln sec x + tan x
$\int \csc x dx$	ln csc x - cot x	ln csc x - cot x	ln csc x - cot x	ln csc x - cot x	ln csc x - cot x
$\int \frac{1}{x} dx$	ln x	ln x	ln x	ln x	ln x
$\int \frac{1}{x^2} dx$	$-\frac{1}{x}$	$-\frac{1}{x}$	$-\frac{1}{x}$	$-\frac{1}{x}$	$-\frac{1}{x}$
$\int \frac{1}{x^3} dx$	$-\frac{1}{2x^2}$	$-\frac{1}{2x^2}$	$-\frac{1}{2x^2}$	$-\frac{1}{2x^2}$	$-\frac{1}{2x^2}$
$\int \frac{1}{x^4} dx$	$-\frac{1}{3x^3}$	$-\frac{1}{3x^3}$	$-\frac{1}{3x^3}$	$-\frac{1}{3x^3}$	$-\frac{1}{3x^3}$
$\int \frac{1}{x^5} dx$	$-\frac{1}{4x^4}$	$-\frac{1}{4x^4}$	$-\frac{1}{4x^4}$	$-\frac{1}{4x^4}$	$-\frac{1}{4x^4}$
$\int \frac{1}{x^6} dx$	$-\frac{1}{5x^5}$	$-\frac{1}{5x^5}$	$-\frac{1}{5x^5}$	$-\frac{1}{5x^5}$	$-\frac{1}{5x^5}$
$\int \frac{1}{x^7} dx$	$-\frac{1}{6x^6}$	$-\frac{1}{6x^6}$	$-\frac{1}{6x^6}$	$-\frac{1}{6x^6}$	$-\frac{1}{6x^6}$
$\int \frac{1}{x^8} dx$	$-\frac{1}{7x^7}$	$-\frac{1}{7x^7}$	$-\frac{1}{7x^7}$	$-\frac{1}{7x^7}$	$-\frac{1}{7x^7}$
$\int \frac{1}{x^9} dx$	$-\frac{1}{8x^8}$	$-\frac{1}{8x^8}$	$-\frac{1}{8x^8}$	$-\frac{1}{8x^8}$	$-\frac{1}{8x^8}$
$\int \frac{1}{x^{10}} dx$	$-\frac{1}{9x^9}$	$-\frac{1}{9x^9}$	$-\frac{1}{9x^9}$	$-\frac{1}{9x^9}$	$-\frac{1}{9x^9}$

$$V_p = V_{r,max} \sin \left(\omega t + \frac{\pi}{2} \right) = V_{r,max} \cos(\omega t)$$

$$V_r = V_{r,max} \sin(\omega t)$$

$$V_p - V_r = V_{r,max} \left[\cos(\omega t) - \sin(\omega t) \right] = \sqrt{2} V_{r,max} \sin \left(\omega t + \frac{\pi}{4} \right)$$

$$V_{p,r} = \frac{1}{\sqrt{2}} V_{r,max}$$

$$Q_{total} = Q_1 + Q_2 = 3\epsilon_0 \frac{S}{d_1} U_1$$

$$C_1 = C_2 = \epsilon_0 \frac{S}{d_1} = 8.85 \text{ pF}$$

$$Q = \frac{Q_1 + Q_2}{2} = 13,275 \cdot 10^{-6} \text{ C}$$

$$U = \frac{Q}{C_1} = \frac{2}{3} U_1 = 1,500 \text{ V}$$

$$W = \frac{1}{2} Q U = \frac{9}{8} \epsilon_0 \frac{S}{d_1} U_1^2 = 9,956 \cdot 10^{-6} \text{ J}$$

$$-x^2 + 4x + 3 = (x+1)(x-3) = 0$$

$$\begin{pmatrix} x & y \\ z & t \end{pmatrix} = \begin{pmatrix} x+1 & 0 \\ 0 & x+1 \end{pmatrix} = \begin{pmatrix} -1 & y \\ z & -1 \end{pmatrix}$$

$$\begin{pmatrix} x & y \\ z & t \end{pmatrix} = \begin{pmatrix} x^2 & -xy \\ 0 & y^2 - xz \end{pmatrix} = \begin{pmatrix} 0 & -1 \\ y^2 - xz & -1 \end{pmatrix}$$

$$Q_{11} = +C T_1 (1 - \epsilon^{2d}) + +C T_2 (X - 1)$$

$$Q_{22} = +C T_1 (X - 1) + +C T_2 (1 - \epsilon^{2d})$$

$$n_1 = \frac{v_1}{c} = n_2 = \frac{v_2}{c} = \epsilon^{1/2}, \quad \frac{T_1}{T_2} = \epsilon^{-1}$$

International Advanced Level Physics (2018)

Exam Board: Pearson Edexcel

Duration of course: 2 years (A level), 1 year (AS level)

Prerequisites: Minimum of a Grade 4 in IGCSE Physics and Maths although a higher grade is recommendable in order to be successful.

How is the A level assessed?

Candidates are evaluated through externally assessed examinations in the June and January examination series each year.

AS Level

3 exams all taken in the June exam series

A2 Level

One exam (Paper 4) taken in the January exam series of Year 13 and 2 exams in the June series of Year 13

AS Level YR12

Paper 1: Mechanics and
Materials

Paper 2: Waves and
Electricity

Paper 3: Practical Skills
in Physics

A2 Level YR13

Paper 4: Further Mechanics,
Fields and Particles

Paper 5: Thermodynamics,
Radiation, Oscillations and
Cosmology

Paper 3: Practical Skills in
Physics II

AS Level Exam weighting

**Paper 1: 80 Marks, 90 minutes, 40% of AS Level
(20% A level)**

**Paper 2: 80 Marks, 90 minutes, 40% of AS level
(20% A level)**

**Paper 3: 50 Marks, 80 minutes, 20% of AS level
(10% A level)**

A2 Level Exam weighting

50% of marks from AS plus

Paper 4: 80 Marks, 90 minutes, 20% of A Level

Paper 5: 80 Marks, 90 minutes, 20% of A Level

Paper 6: 50 Marks, 80 minutes, 10% of A Level

Content

[Link to Edexcel
Specification pdf](#)

The content is relevant for learners who have achieved an International GCSE in Physics and who want to study this subject at a higher level. The content has been updated from the previous Pearson Edexcel International Advanced Subsidiary in Physics and the previous Pearson Edexcel International Advanced Level in Physics qualifications. It covers the major topics in physics, including mechanics, materials, waves, electricity, fields, thermodynamics, radiation, particles, oscillations and cosmology.

Aims and Objectives

The aims and objectives of these qualifications are to enable students to develop:

- their interest in and enthusiasm for the subject, including developing an interest in further study and careers associated with Physics

- essential knowledge and understanding of different areas of the subject and how they relate to each other
 - a deep appreciation of the skills, knowledge and understanding of scientific methods
 - competence and confidence in a variety of practical, mathematical and problem-solving skills
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Your future with Physics

[Link to Institute of Physics Website](#)

Possible career paths include:

- Astronomy and Space
- Climate science and meteorology
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