

A Level Maths Learning Journey

Moving onto a maths related degree, apprenticeships or career

Proof

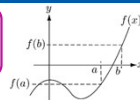
Vectors

$$\binom{n}{r} = {}^nC_r = \frac{n!}{r!(n-r)!}$$

Binomial expansion

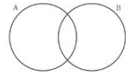
$$\mathbf{r} = \mathbf{r}_0 + \mathbf{v}t$$

Further Kinematics

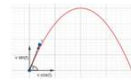


Numerical methods

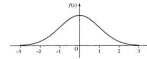
Applications of forces



Probability



Projectiles



Normal distribution

Forces at any angle

$$\mathbf{F} = m\mathbf{a}$$

Integration

$$z = \frac{x - \mu}{\sigma}$$

$$\frac{d}{dx} [f(x)g(x)] = f(x)g'(x) + f'(x)g(x)$$

Differentiation

$$y = f(x)$$

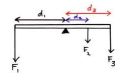
Algebraic and partial fractions

$$\begin{aligned} \cot \theta &= \frac{1}{\tan \theta} \\ \csc \theta &= \frac{1}{\sin \theta} \\ \sec \theta &= \frac{1}{\cos \theta} \end{aligned}$$

Sequences and series

Σ

Moments



Functions and modelling

Trigonometry

YEAR 13

Start Year 2 Content

Intro to parametric equations

Variable acceleration

Regression and correlation

$$Y = a + bX$$

Intro to Y2 differentiation and integration

Probability

Forces and motion

Exponentials and logs

$$\log_b(a) = c \iff b^c = a$$

Vectors



Sampling Methods

$$\frac{dy}{dx}$$

Data presentation and interpretation

Differentiation

Hypothesis testing

Trigonometry

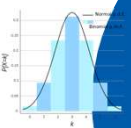
$$\begin{aligned} v &= u + at \\ v^2 &= u^2 + 2as \\ s &= ut + \frac{1}{2}at^2 \\ s &= vt - \frac{1}{2}at^2 \\ s &= \frac{1}{2}(u+v)t \end{aligned}$$

$\int$

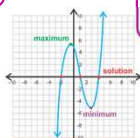
Statistical distributions

Constant acceleration

Integration



Quantities and Units in Mechanics



Further Algebra

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

YEAR 12

Coordinate Geometry

Algebraic expressions

$$1 - 4y \leq 6$$

Welcome