

## A guide to use calculators when teaching AS and A level Mathematics

Below you can find links to videos designed to help you teach the content of AS and A level Mathematics qualifications with the aid of the calculator.

### AS Mathematics – Pure Mathematics content

Use your calculator to enter negative and fractional powers.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use your calculator to check solutions to quadratic equations quickly.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Check solutions to simultaneous equations using your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the  ${}^n C_r$  and ! functions on your calculator to answer this question.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Work out each coefficient quickly using the  ${}^n C_r$  and power functions on your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use trigonometrical functions on your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Check vector calculations on your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use your calculator to check solutions to quadratic equations quickly.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Find the value of the first derivative at a given point on your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Check your solution to a definite integral using your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Work this out in one go using the  $e^{[ ]}$  button on your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the logarithm buttons on your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

### AS Mathematics – Statistics content

Use your calculator to find the mean and median of discrete data.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use your calculator to find summary statistics from a frequency table.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use your calculator to find summary statistics from a grouped frequency table.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the  ${}^n C_r$  function on your calculator to work out binomial probabilities.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the binomial **cumulative distribution** function on your calculator. You want to find  $P(X \leq 7)$ , not  $P(X = 7)$ . On some calculators, this is labelled 'Binomial CD'.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Find the critical value for a hypothesis test using your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

### AS Mathematics – Mechanics content

Check calculations with vectors on your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use your calculator to check solutions to quadratic equations quickly.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

**A level Mathematics – Pure Mathematics content**

Check solutions for a set of partial fractions.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use your calculator to work out values of modulus functions.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the table function on your calculator to generate terms in the sequence for this function, or to check an  $n$ th term.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Calculate the sum of series.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Check your answer by using your calculator to calculate the sum of the series.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use your calculator to calculate the coefficients of the binomial expansion.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use your calculator to evaluate trigonometric functions in radians.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Solve this equation numerically using your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use your calculator to evaluate inverse trigonometric functions in radians.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the polynomial function on your calculator to solve the quadratic equation.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the iterative formula to work out  $x_1$ ,  $x_2$  and  $x_3$ . You can use your calculator to find each value quickly.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use your calculator to check your value of  $a$  using numerical integration.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Evaluate integrals of the product of two functions.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Perform calculations on 3D vectors using your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

### **A level Mathematics – Statistics content**

Use your calculator to calculate the PMCC.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the Normal CD function on your calculator to find probabilities from a normal distribution.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the Inverse Normal function on your calculator to calculate values which satisfy given probability statements for the normal distribution.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the Inverse Normal function on your calculator with the standard normal distribution.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the inverse normal distribution function on your calculator to find the critical region directly.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

**A level Mathematics – Mechanics content**

Use your calculator to solve a quadratic equation.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)

Use the STO function to store exact values on your calculator.

- [Graphic calculator tutorial](#)
- [Scientific calculator tutorial](#)