

Year 11
Maths GCSE
Preparation



Ousedale
School

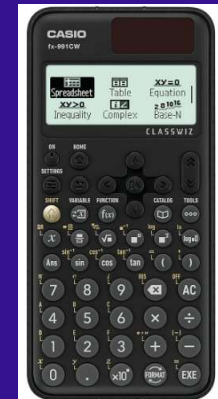
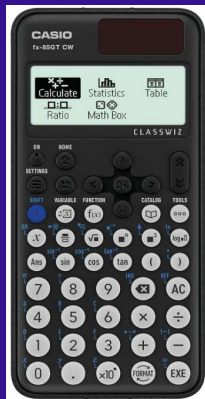
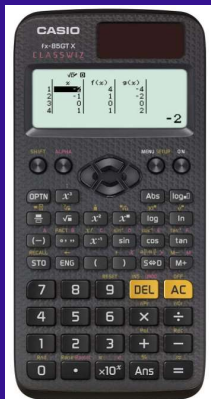
Maths exam papers

- Three 1 hour 30 mins papers
- 80 marks per paper
 - Paper 1 Non – Calculator:
 - Paper 2 Calculator
 - Paper 3 Calculator



Equipment needed

- Black pens, pencil, rubber, ruler, protractor, compasses
- Casio scientific are recommended calculator
- ClasswizFX 85 GT£10.65 from Finance
- Consider FX 991CW £20.75 for A level



Calculators

- ✓ New calculators have different functions and keys
- ✓ Check that students can put fractions and standard form into the calculator
- ✓ Make sure that they can reset and put into calculation mode
- ✓ Practise papers with the calculator that they will use in the exam
- ✓ <https://www.youtube.com/@TheCalculatorGuide> has some videos explaining the functions and how to change formats



How to Revise

Complete Practice and Past Papers

(These may be set on vle.mathswatch.co.uk)

Identity areas for support from these and from QLA sheets

Use websites such as www.mathsgenie.co.uk, www.mymaths.co.uk, www.gcsepod.co.uk, vle.mathswatch.co.uk or revision guides to relearn these topics

Session 6 on Wednesdays for extra help from staff or to complete papers online



What to learn

A formula sheet will be provided with formulae for:

Perimeter, area and volume

Pythagoras' theorem and trigonometry

Quadratic formula

But learn:

Angle rules in words

Exact values for sin, cos and tan of special angles

Higher

Circle theorems



Formula sheet

Perimeter, area and volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

$$\text{Area of a trapezium} = \frac{1}{2}(a + b)h$$

Volume of a prism = area of cross section \times length

Where r is the radius and d is the diameter:

$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

Quadratic formula

The solution of $ax^2 + bx + c = 0$
where $a \neq 0$

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

Higher only

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is number of times that the interest is compounded:

$$\text{Total accrued} = P \left(1 + \frac{r}{100} \right)^n$$

Probability

Where $P(A)$ is the probability of outcome A and $P(B)$ is the probability of outcome B :

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

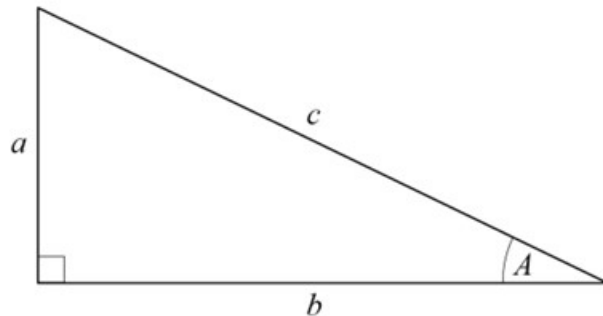
$$P(A \text{ and } B) = P(A \text{ given } B) P(B)$$

Higher only



Formula sheet

Pythagoras' Theorem and Trigonometry



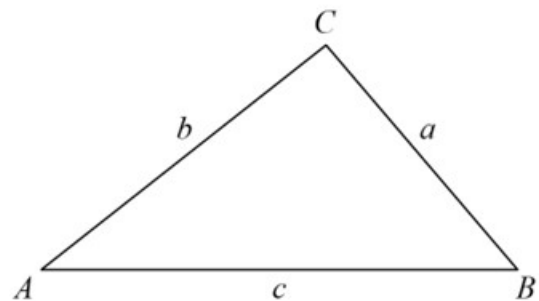
In any right-angled triangle where a , b and c are the length of the sides and c is the hypotenuse:

$$a^2 + b^2 = c^2$$

In any right-angled triangle ABC where a , b and c are the length of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c} \quad \cos A = \frac{b}{c} \quad \tan A = \frac{a}{b}$$

Higher only



In any triangle ABC where a , b and c are the length of the sides:

$$\text{sine rule: } \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\text{cosine rule: } a^2 = b^2 + c^2 - 2bc \cos A$$

$$\text{Area of triangle} = \frac{1}{2} ab \sin C$$



Presentation

- Dark black pen as papers are scanned in
- Straight lines for linear graphs and lines of best fit
- Smooth curves for other graphs and cumulative frequency
- Show solutions and stages of working carefully
- Practise checking answers (substitute solutions back into equations to check for errors)
- Cover up a line at a time and work through again



Presentation

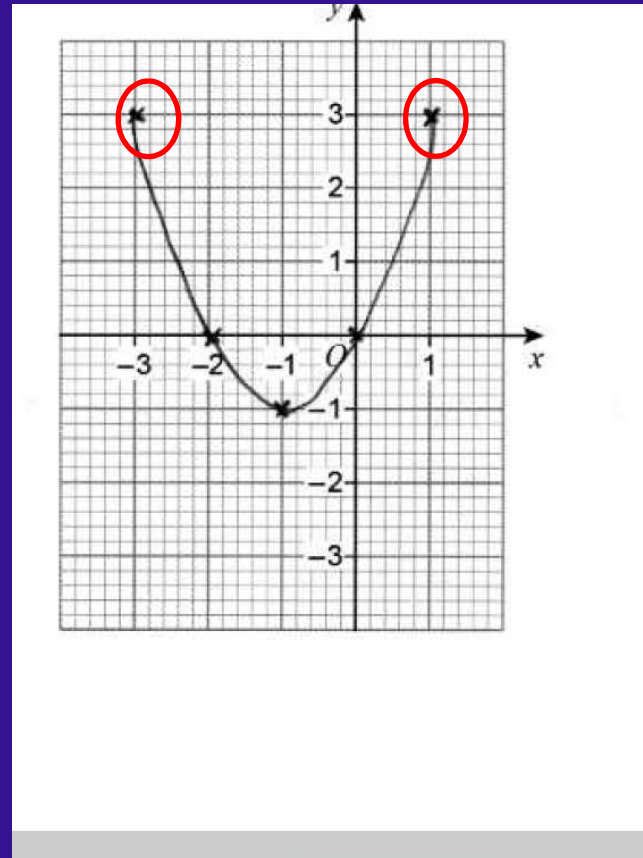
- Lay out work logically and clearly.
- Don't cross out attempts until you have a better attempt.
- Cross out with a single line
- Give answers in the form asked for (exact means as fractions, with π or square roots NOT every digit from a calculator display)
- Always use decimals or fractions for probability



Presentation

Accuracy is important

Draw diagrams in pencil first and then rub out if necessary



Show your working out!

Colin has £800. He decides to invest it for three years.

He will choose between these two savings accounts

Money Maker

5% per year
compound interest

Cash Saver

2% per year
simple interest

plus

one final bonus equal
to 10% of the value of the
original investment

Which account will provide the greater amount of interest for Colin?

Tick a box.

Money Maker.

Cash Saver.

You must show your working out.

[4 marks]



Helping students to prepare

- ✓ Encourage the use of post its, flashcards or posters to help them remember key facts
- ✓ Ask students to explain how they answered a question
- ✓ Encourage use of recommended websites and revision guides
- ✓ Check that they have all necessary equipment especially a calculator and practise using it

