

A Level Maths

WYKE START BRIDGING WORK

Name:

Teacher:

Instructions

Please complete all the questions in this pack and bring to your first lesson in September.

You will need to bring the following equipment with you to your lessons each day: pen, pencil, ruler, lined paper and your maths textbook.

Please see the next page about the required equipment for the A-Level Mathematics course. You can use any calculator to complete this booklet - we suggest the one you used for your GCSE's.

If you have any questions please write them below to ask at your first lesson:

If you need support with any of the topics in this booklet - please detail them below.

Required Equipment

A FX-CG100 or a FX-991-CW+ Casio calculator

In lessons we use an on-screen emulator built by Casio to show students how to use the functions. Older models of calculator will not be supported for the duration of the 2 years of the course, so we specifically require students to have one of these two models.

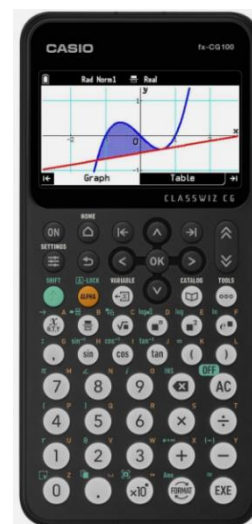
FX-991-CW+

Available from Casio /supermarkets / amazon for around £25-30. It must be the model with gold buttons. There is a GCSE version which looks similar (with a blue button) – this is not acceptable as it does not have all the functions required for the A-level.



FX-CG100

Available from Casio / amazon (for around £140), or from Wyke (£90). We will have these for sale on parentpay in September. This calculator is recommended for further maths A-level, but optional for maths A-level.

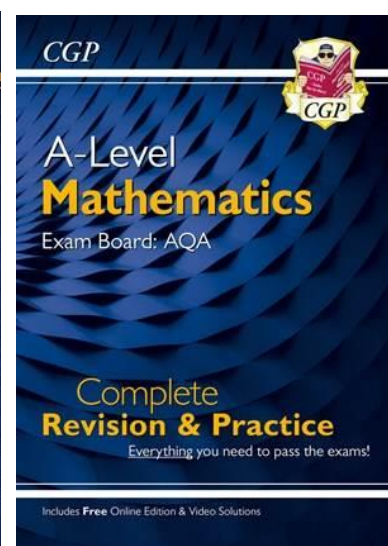
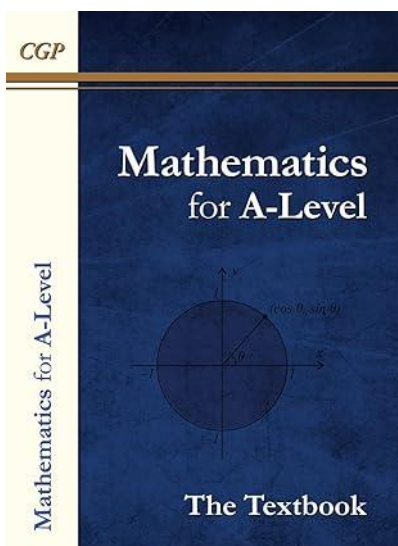


It has more powerful graphing functions and helps students to visualise problems. It is particularly helpful for statistics and mechanics.

Textbooks

CGP – A-level maths.
Available from Wyke on Parentpay in September for £17. Approx. £35-40 on Amazon.

A-Level Maths AQA Complete Revision & Practice, £12 on parentpay, or approx. £20 on Amazon.



Q1.

Simplify fully $(8x^3y^5)^2$

(Total 2 marks)

Q2.

Circle the expression that is equivalent to $(4a^5)^2$

$16a^{10}$

$16a^7$

$8a^{10}$

$8a^7$

(Total 1 mark)

Q3.

Circle the expression that is equivalent to $\frac{2x^2+1}{x}$ where x is not equal to 0

$2x + 1$

$2x^2 + \frac{1}{2}$

$2x + \frac{1}{x}$

$4x + \frac{1}{x}$

(Total 1 mark)

Q4.

Rearrange $p = r + 3$ to make r the subject.
Circle your answer.

$r = p + 3$

$r = p - 3$

$r = 3 - p$

$r = \frac{p}{3}$

(Total 1 mark)

Q5.

Rearrange $y = \frac{x}{3} + 9$ to make x the subject.

(Total 2 marks)

Q6.

Make y the subject of $x = \frac{5y+4}{2y-3}$

(Total 4 marks)

Q7.

Multiply out and simplify $(x - 8)^2$

(Total 2 marks)

Q8.

(a) Factorise $x^2 - 100$

(1)

(b) Solve $7x + 6 > 1 + 2x$

(2)

(Total 3 marks)

Q9.

- (a) Factorise $x^2 - y^2$

(1)

- (b) Solve $\frac{2x}{5} + 1 = 13$

(3)

(Total 4 marks)

Q10.

- (a) Write $x^2 - 10x + 12$ in the form $(x - a)^2 + b$ where a and b are integers.

(2)

- (b) When $(x - 2)^2 + 7$ has a minimum value, what is the value of x ?

Circle your answer.

-2

2

7

11

(1)

(Total 3 marks)

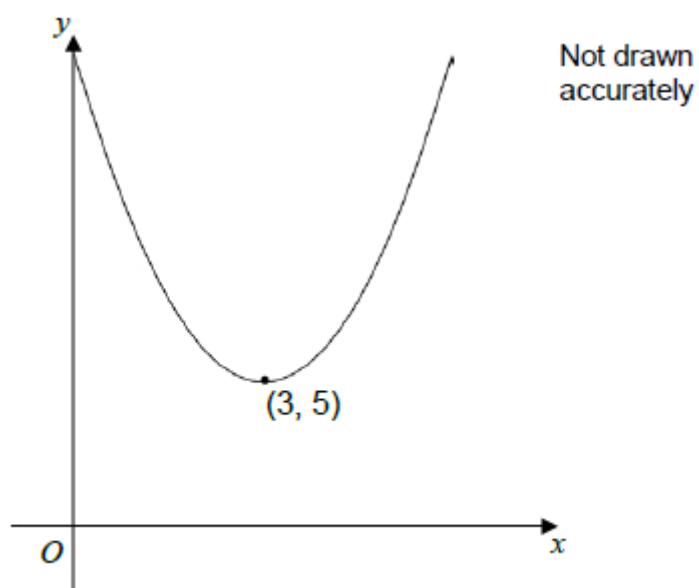
Q11.

- (a) Write $x^2 - 10x + 29$ in the form $(x - a)^2 + b$ where a and b are integers.

(2)

- (b) A sketch of $y = x^2 + cx + d$ is shown.

The turning point is (3, 5)



Work out the values of c and d .

(3)

(Total 5 marks)

Q12.

Circle the expression equivalent to $x^2 - 4x - 12$

$(x - 4)(x - 8)$

$(x + 3)(x - 4)$

$(x - 12)(x + 1)$

$(x + 2)(x - 6)$

(Total 1 mark)

Q13.

Circle the **two** roots of $(2x + 3)(5x - 2) = 0$

$-\frac{3}{2}$

$-\frac{2}{5}$

$\frac{2}{5}$

$\frac{3}{2}$

(Total 1 mark)

Q14.

(a) Expand and simplify $(6x - 1)(2x + 3)$

(2)

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

(3)

(Total 5 marks)

Q15.

Solve $5x^2 = 10x + 4$

Give your answers to 2 decimal places.

(Total 4 marks)

Q16.

Solve the simultaneous equations.

$$2x + y = 18$$

$$x - y = 6$$

(Total 3 marks)

Q17.

$$2x + 3y = 15.5$$

$$x + y = 6$$

Work out the values of x and y .

(Total 3 marks)

Q18.

Use algebra to work out the x -coordinates of the points of intersection of

$$y = 3x^2$$

and $y = 4x + 2$

Give your answers to 1 decimal place.

(Total 5 marks)

Q19.

Solve $5x - y = 5$
 $2y - x^2 = 11$

You **must** show your working. Do **not** use trial and improvement.

(Total 6 marks)

Q20.

(a) Solve $\frac{y-3}{6} = 4$

(3)

(b) Solve $4x^2 - 25 < 0$

(3)

(c) Solve $\frac{1}{y-6} = 5$

(3)

(Total 9 marks)

Q21.

Show that $\frac{2x+1}{3} + \frac{5x-2}{2}$ simplifies to $\frac{19x-4}{6}$

(Total 2 marks)

Q22.

Solve $\frac{x}{4} - \frac{2x}{x+2} = 1$

Give your solutions to 2 decimal places. You **must** show your working.

(Total 6 marks)