

Core Examinations Event



Timings:

- **Sessions 1 and 2 (English and Maths)** will take place in this room until approx. 7pm.
- **Session 3 (Science)** will take place in the main hall until approx. 7:30pm.

Aims of the evening:

- To provide you and your child with **specific** revision strategies for core subjects to be used in the upcoming mock examinations, and in the final approach to the GCSEs.
- To offer practical advice to parents for helping your child to complete effective revision.



Maths Higher Tier Revision

Exam dates...

Paper 1 : Thursday 14th May 2026

Paper 2 : Wednesday 3rd June 2026

Paper 3 : Wednesday 10th June 2026

Year 11 Examinations Night

FRED LONGWORTH
HIGH SCHOOL



Maths Higher Mock Revision List

Higher P1	MW Clip	Higher P2	MW Clip
Area and money	53/22a	Angles in a quadrilateral	123
Equation of a circle	197	Circle theorems proof	184
Equation of straight lines	159a	Cumulative frequency	186
Estimation	91	Direct and inverse proportion	199
Expand triple brackets	178	DMV	142b
Fraction calculations	71/73/74	Graph transformations	196a
Histogram	205	LCM	78/80
Indices	154/188	Percentages, ratios and fractions of amounts	106/87/72/106/165a
nth term	102/103	Prime factors	78
Percentages, ratios and fractions of amounts	106/87/72/106/165a	Pythagoras	150a
Probability	125/204	Quadratic equation/ graphs	98/160
Recurring decimals	177	Quadratic graph	98/160
Reverse mean	62	Ratio sharing	106/165a
Reverse percentages	110	Regions	198
Sectors	167	Rounding	90/155a
Similar shapes	144/201	Scale drawings	38
Simultaneous equations	162	Similar shapes	201
Solve inequalities	139	Solve inequalities	139
Surds	207a/b/c	Substitution	95
Surface area and volume	119	Surds	207a/b/c
Transformations	48/49/50/148	Tree diagrams	175
Trig graphs	195a/b	Trig	168
Types of graph	98/161	Vectors	219
Venn diagrams	127a	Velocity time graphs	216a



Let's pick a topic: EQUATION OF A
LINE

But how
do I
revise
it???



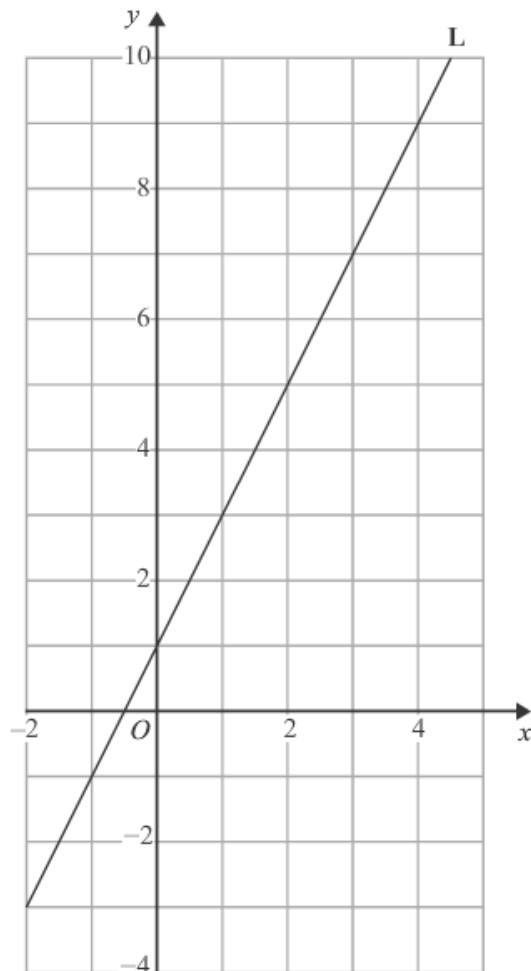
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What do you know already?

Line **L** is drawn on the grid below.



Find an equation for the straight line **L**.
Give your answer in the form $y = mx + c$

What can you do to help?

- Remember there are so many maths resources already done and videos to watch (we will go through these).
- Encourage your child to use the topic list and focus on topics they find **DIFFICULT**.
- Use resources with answers so you can **check** together.

Equation of a line Revision...

Mathsgenie :

Gradient of a line

Parallel and Perpendicular Lines

Equation of a tangent to a circle

GCSE Revision

[Click here to view the 2016 A*-E Specification](#)

NEW: Revision Topics/Lists for May/June 2022 Exams:

• [Edexcel Foundation](#) • [Edexcel Higher](#) • [AQA Foundation](#) • [AQA Higher](#) • [OCR Foundation](#) • [OCR Higher](#)

Grade 5

Videos	Exam Questions	Exam Questions Booklet	Solutions
Gradient of a Line	Exam Questions	Gradient of a Line	Solutions

Grade 6

Videos	Exam Questions	Exam Questions Booklet	Solutions
Parallel and Perpendicular Lines	Exam Questions	Parallel and Perpendicular Lines	Solutions

Grade 8/9

Videos	Exam Questions	Exam Questions Booklet	Solutions
Perpendicular Lines and the equation of a tangent	Exam Questions	Perpendicular Lines	Solutions

A mixture of GCSE style questions.

All answers to the questions with working out to check!

Equation of a Line Revision...

Corbett Maths :

Practice questions are exam style and textbook exercises are several different questions with problem solving in most cases.

Each video shows examples and questions

Linear graphs: gradient of a line [Video 189](#) [Practice Questions](#) [Textbook Exercise](#)

Linear graphs: gradient between points [Video 190](#) [Practice Questions](#) [Textbook Exercise](#)

Linear graphs: $y=mx+c$ [Video 191](#) [Practice Questions](#) [Textbook Exercise](#)

Linear graphs: $y=a$ graphs [Video 192](#) [Practice Questions](#) [Textbook Exercise](#)

Linear graphs: $x=a$ graphs [Video 193](#) [Practice Questions](#) [Textbook Exercise](#)

Linear graphs: find equation of a line [Video 194](#) [Practice Questions](#) [Textbook Exercise](#)

Linear graphs: equation through 2 points [Video 195](#) [Practice Questions](#) [Textbook Exercise](#)

Linear graphs: parallel lines [Video 196](#) [Practice Questions](#) [Textbook Exercise](#)

Linear graphs: perpendicular lines [Video 197](#) [Practice Questions](#) [Textbook Exercise](#)

Linear graphs: midpoint of a line [Video 198](#) [Practice Questions](#) [Textbook Exercise](#)

Linear graphs: real life [Video 198a](#)

Equation of a Line Revision...

Mathswatch...

Interactive
questions to try

Find a Clip

Qualification: GCSE

Tier: All

Grade: All

Topic: Algebra

Search:

Choose Clip (66)

Clip	Title
157	Factorising and Solving Quadratics
158	The Difference of Two Squares
159a	Equation of a Straight Line - $y = mx + c$
159b	Equation of a Straight Line - Gradient and Coordinates

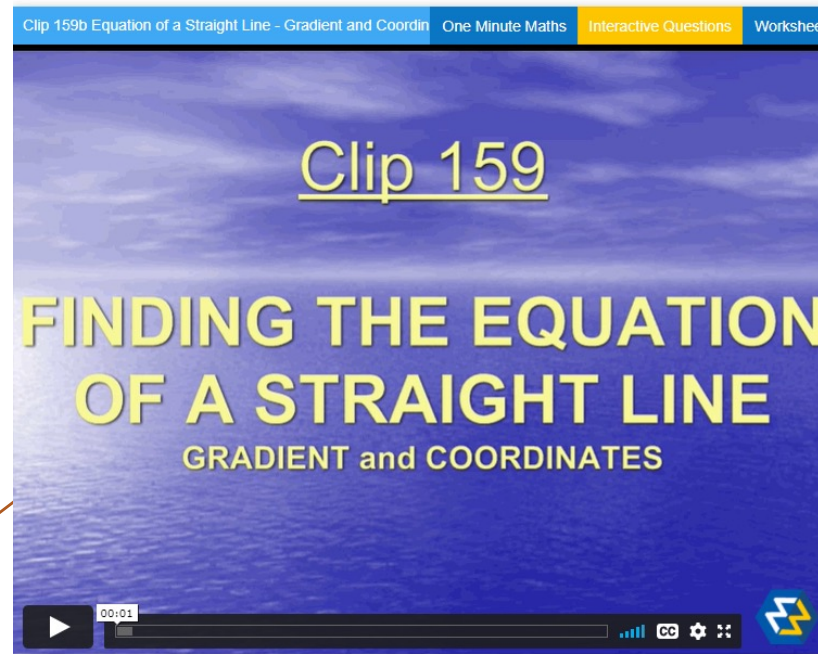
Standard Questions 1 2 3 4 5 Harder Questions 1 2 3 4 5 »

Question Progress

Work out the equation of the line which has a gradient of 2 and passes through the point (2, 5).

Submit Answer

Video for
each



Revision guides and workbooks...

Revision Guide

ALGEBRA

Had a look ☐ Nearly there ☐ Nailed it! ☐



Straight-line graphs 2

On page 25 you can revise how to find an equation by looking at a graph. You can also use algebra to find the equation. This is usually a more reliable and accurate method.

1 Given one point and the gradient

Substitute the gradient for m in $y = mx + c$

Gradient 2, passing through point (3, 7)

Substitute the x - and y -values given into the equation

$$\begin{aligned} y &= 2x + c \\ 7 &= 2 \times 3 + c \\ 7 &= 6 + c \quad (-6) \\ c &= 1 \\ y &= 2x + 1 \end{aligned}$$

Solve the equation to find c

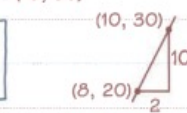
Write out the equation

2 Given two points

Draw a sketch showing the two points

Passing through points (8, 20) and (10, 30)

Work out the gradient of the line using a triangle



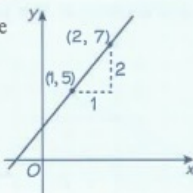
Use method 1 (on the left) and one of the points given to find the equation

$$\begin{aligned} \text{Gradient} &= \frac{10}{2} = 5 \\ y &= 5x + c \\ 30 &= 5 \times 10 + c \\ c &= -20 \\ y &= 5x - 20 \end{aligned}$$

Worked example

A line passes through the points with coordinates (1, 5) and (2, 7). Find the equation of the line.

(3 marks)

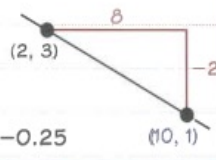


$$\begin{aligned} \text{Gradient, } m &= \frac{2}{1} = 2 \\ \text{Equation of line: } y &= mx + c \rightarrow y = 2x + c \\ \text{For point (1, 5), } x &= 1, y = 5 \\ \text{Substitute these values into the equation:} \\ 5 &= 2 + c \rightarrow c = 3 \\ \text{The equation is } y &= 2x + 3 \end{aligned}$$

Positive or negative?

If the line slopes down then the gradient is negative.

$$\text{Gradient} = \frac{-2}{8} = -0.25$$



Examiners' report

Make sure you know how to find the equation of a line through two points:

1. Draw a **sketch** of the line.
2. Use a **triangle** to find the gradient.
3. Substitute the gradient and the x - and y -values of one of the points into $y = mx + c$.
4. Solve your equation to find c .

Real students have struggled with questions like this in recent exams – be prepared!



Target grade 5

Now try this

Worked solution video



Straight-line graphs 2

Target grade 5

Guided

- 1 Find the equation of the straight line with
 - (a) gradient 3, passing through the point (2, 5)

$$y = 3x + c$$

$$5 = \dots \times \dots + c$$

$$c = \dots$$

$$y = \dots x \dots \dots \dots \quad (2 \text{ marks})$$

- (b) gradient -2, passing through the point (3, 6)

Substitute the value of the gradient into $y = mx + c$. Then substitute the x - and y -values given into your equation. Solve the equation to find c . Remember to write your completed equation at the end.

- (c) gradient 4, passing through the point (-2, 7).

..... (2 marks)

..... (2 marks)

Target grade 5

Guided

- 2 Find the equation of the straight line which passes through the points

- (a) (3, 2) and (5, 6)

$$m = \frac{\dots - \dots}{\dots - \dots} = \dots$$

$$2 = \dots \times 3 + c$$

$$c = \dots$$

$$y = \dots \dots \dots \quad (3 \text{ marks})$$

- (b) (2, 5) and (4, 9)

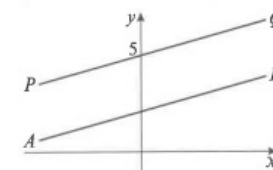
- (c) (-1, -2) and (-4, -8).

..... (3 marks)

..... (3 marks)

Target grade 5

- 3 Here are two straight lines. AB is parallel to PQ . The equation of the line AB is $y = 4x + 1$. Find the equation of the straight line PQ .



Find the gradient of AB .
Find the value of the y -intercept for PQ .
Use $y = mx + c$ to find the equation of PQ .

..... (2 marks)

Target grade 5

- 4 A straight line passes through the points with coordinates (-1, -1), (3, 15) and (k, 23). Work out the value of k . You must show all your working.

Problem solved! First work out the gradient of the line using the first two points.

$k = \dots \dots \dots$ (4 marks)

Revision Workbook

Revision cards...

- Remember that **DOING** maths is better than **READING** maths.
- Encourage your child to actually sit and answer questions and **check** them.
- Make some **revision cards**, with a skill/formula on one side, and an example question on the other.
- Tick off once a skill is mastered and highlight what you still need to revise!

* Example *

Find the equation of the line which passes through A $(-1, -4)$ and B $(3, 4)$.

x_1 y_1

x_2 y_2

$m = \text{gradient}$

① Find the gradient (m):

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - (-4)}{3 - (-1)} = \frac{4 + 4}{3 + 1} = \frac{8}{4} = 2$$

② Sub into $y = mx + c$ to find c.

Answer: $y = 2x - 2$

Using $(3, 4)$

$$\begin{aligned} y &= mx + c \\ 4 &= (2 \times 3) + c \\ 4 &= 6 + c \\ -6 &-6 \\ -2 &= c \end{aligned}$$

Front:

The key information and example question

* Practice Question *

Find the equation of the line which passes through A $(-2, 7)$ and B $(1, -2)$.

x_1 y_1

x_2 y_2

① Gradient (m) = $\frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 7}{1 - (-2)} = \frac{-9}{3} = -3(m)$

② Sub into $y = mx + c$ using $(-2, 7)$ or $(1, -2)$.

$(-2, 7) \rightarrow$

$$\begin{aligned} y &= mx + c \\ 7 &= (-3 \times -2) + c \\ 7 &= 6 + c \\ -6 &-6 \end{aligned}$$

$1 = c$

Answer $\rightarrow y = -3x - 6$

Back:

Practice question and solution

Negative numbers

- If the signs of the 2 numbers are different your answer will be negative. $\therefore$

F.E

$$3 \times (-5) = -15$$

$$(-3) \times 5 = -15$$

$$12 \div (-2) = -6$$

$$(-12) \div 2 = -6$$

Timesing + dividing

- If the signs of the 2 numbers are the same your answer will be positive. $\cup$

F.E

$$3 \times 5 = 15$$

$$(-3) \times (-5) = 15$$

$$12 \div 2 = 6$$

$$(-12) \div (-2) = 6$$

Negative numbers

- When you add a positive number onto a negative you are increasing the value.

$$-3) + 5 = 2 \text{ (like taking away)}$$

- When you add a negative onto a positive you are decreasing the value.

$$+ + (-6) = -2 \text{ (make colder)}$$

When you add 2 negatives it's like adding ice

$$(-4) + (-4) = -8$$

Adding + Subtracting

- When you take a positive number from a negative you are decreasing the value.

(-2)

$$(-2) - 4 = -6 \text{ (like adding)}$$

- Taking a negative from a negative is the same as adding a positive.
- 2 negatives cancel each other out

$$5 - (-3) = 8$$

$$5 + 3 = 8$$

- * Subtracting a negative is turning a loss into a gain.

Revision sessions...

Wednesday after school, 3pm

Mr Dearnley – M4

Mr Bradley – M8

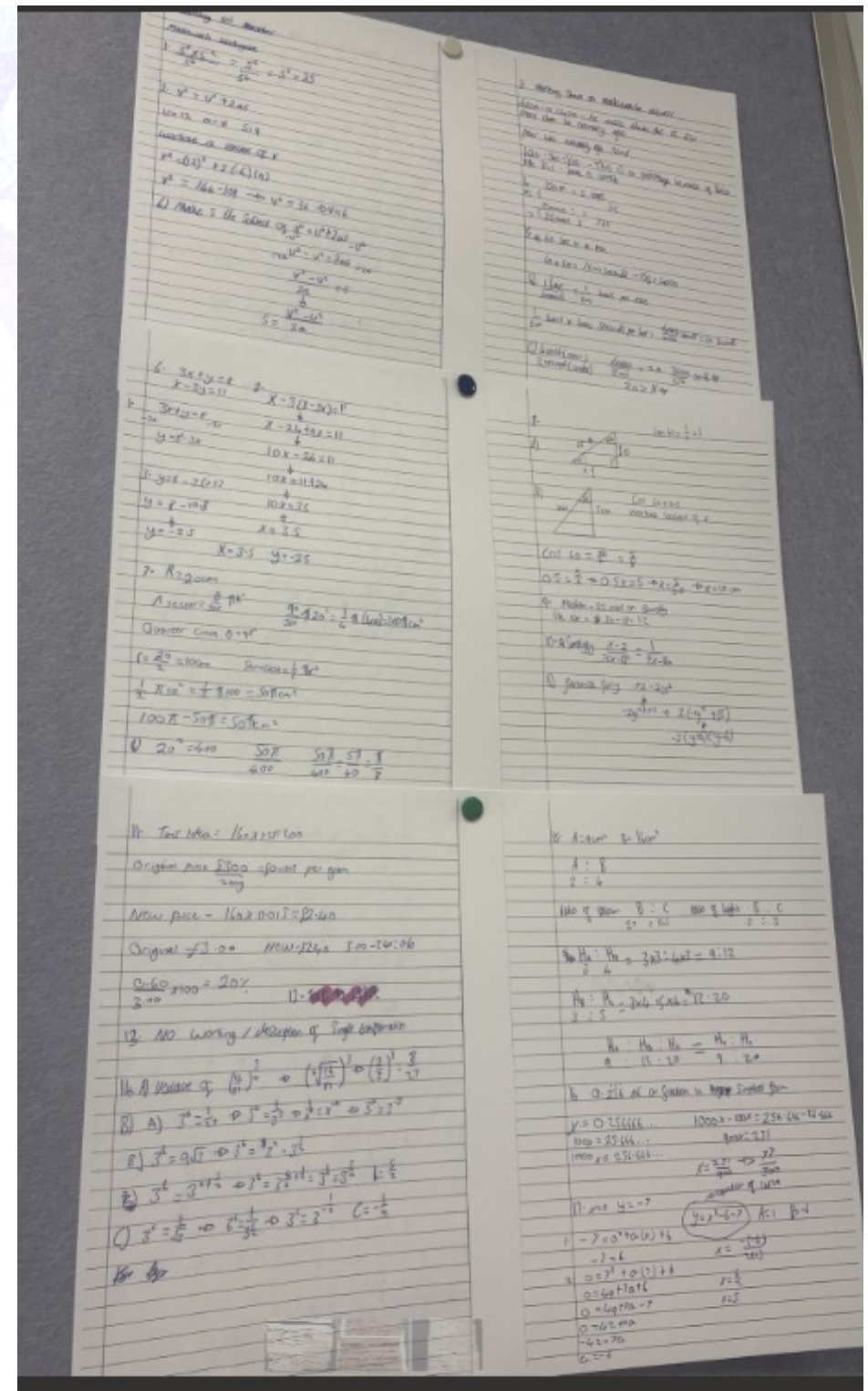
Mrs Taylor – M6

Mrs Reece – M5

Miss Gallagher – M9

Other things to note...

Mrs Roylance has emailed about our concerns regarding inappropriate use of AI.



Other things to note...

If your child misses a maths lesson, it is their responsibility to catch up on missed work, as we don't have time to reteach content.

This can be done on all of the platforms shown to you this evening.

The cosine rule - angle

Angle cosine formula!

$$\cos(A) = \frac{b^2 + c^2 - a^2}{2bc}$$

Remember! Must be included.

Q1:

$\cos(x) = \frac{13^2 + 11^2 - 9^2}{2(13)(11)}$

$\cos(x) = 0.73076923$

$\cos^{-1} \rightarrow x = 43.0^\circ$

The cosine rule

Eg. Find the length of side X. Give your answer to 3 sig. fig.

$x^2 = 16^2 + 23^2 - 2(16)(23) \times \cos(112)$

$x^2 = 1060.710453$

$x = 32.6 \text{ cm (3 s.f.)}$

The cosine rule - angle

Q: Calculate the size of angle MNL.

$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$

$\cos x = \frac{14^2 + 21^2 - 24^2}{2(14)(21)}$

$\cos x = 0.103711466$

$\cos^{-1} \rightarrow x = 84.0^\circ$

The cosine rule - side

It's all about being included

We use cosine when there is two sides but the angle is between them.

the included angle

Cosine! $a^2 = b^2 + c^2 - 2bc \cos A$

To summarise...

- **Mathswatch** – the videos are great for learning the skills and the interactive questions provide you with instant feedback.
- **Corbett Maths** – another way to watch videos and practice what you have learnt. All questions have answers attached.
- **Mathsgenie** – great for exam style questions. All exam questions have worked solutions.
- **Self Directed Study Hub** – on the school website. Adding videos to support with homework/revision, past papers available, revision list.