LCOL Basic Skills – Pack 4

Topics

Algebra – Can I solve equations with fractions?

Last Needed - 2018

1 ▶ 2011 LCOL Paper 1 – Question 3 (c) ☐

Differentiation – Can I find the equation of a tangent to a function at a given point?

Last Needed – 2023

2 ▶ 2003 LCOL Paper 1 – Question 8 (c) ☐

Patterns – Can I find the sum of an arithmetic series?

Last Needed - 2022

3 ▶ 2011 LCHL Paper 1 – Question 5 (b) ☐

Coordinate Geometry – Can I find the equation of a circle?

Last Needed - 2023

4 ▶ 2010 LCOL Paper 2 – Question 3 (a) ☐

Statistics – Can I find the margin of error and create a 95% confidence interval?

Last Needed - 2023

5 ▶ 2015 LCOL Strand 1 Supplementary Paper – Question 1 (a) ☐
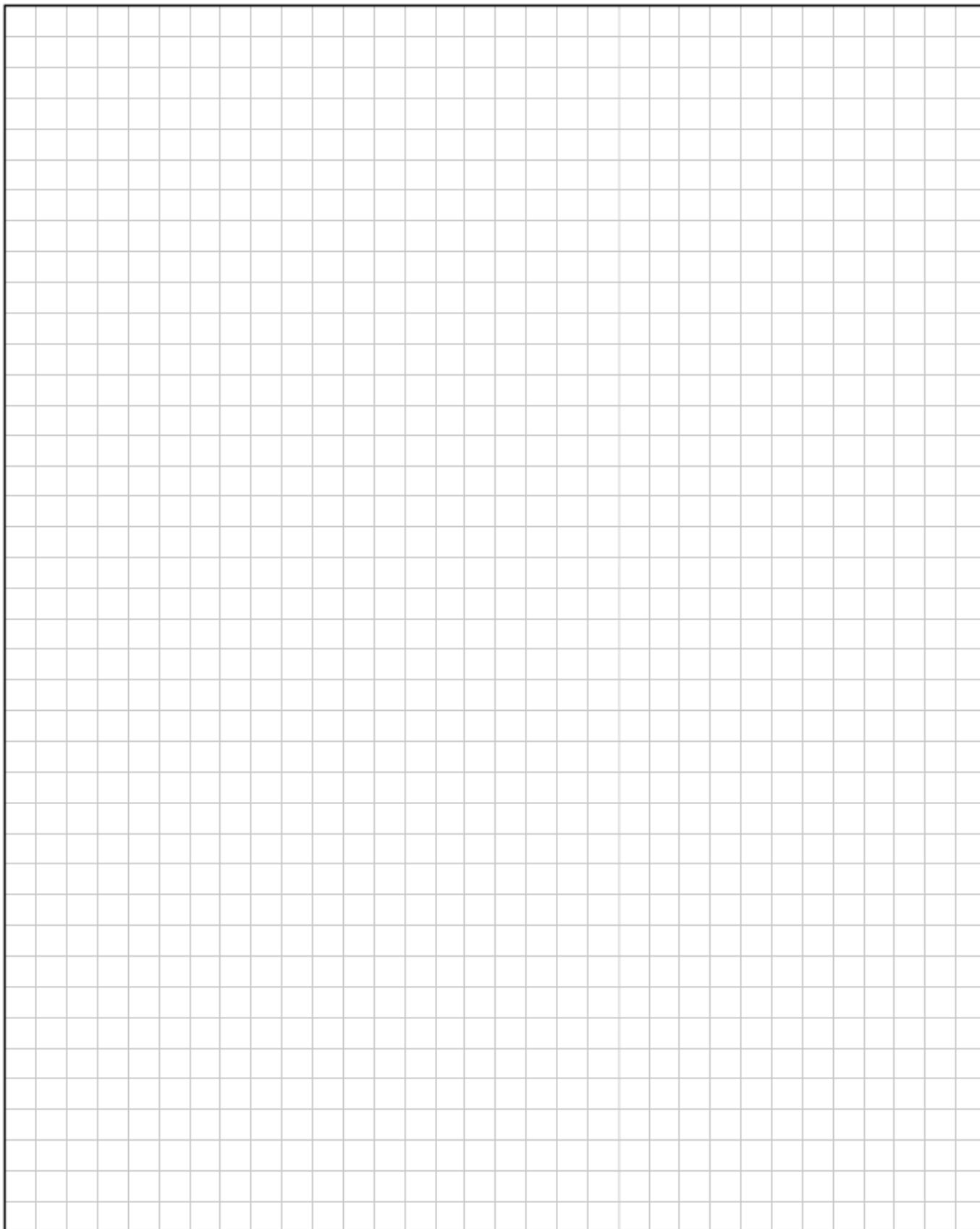
www.mathspoints.ie for **worked solutions** to these questions.

🗀 LCOL Resources by Topic

🗀 LCOL Revision – 50 Common Questions

1 ▶ 2011 LCOL Paper 1 – Question 3 (c)

Solve for x

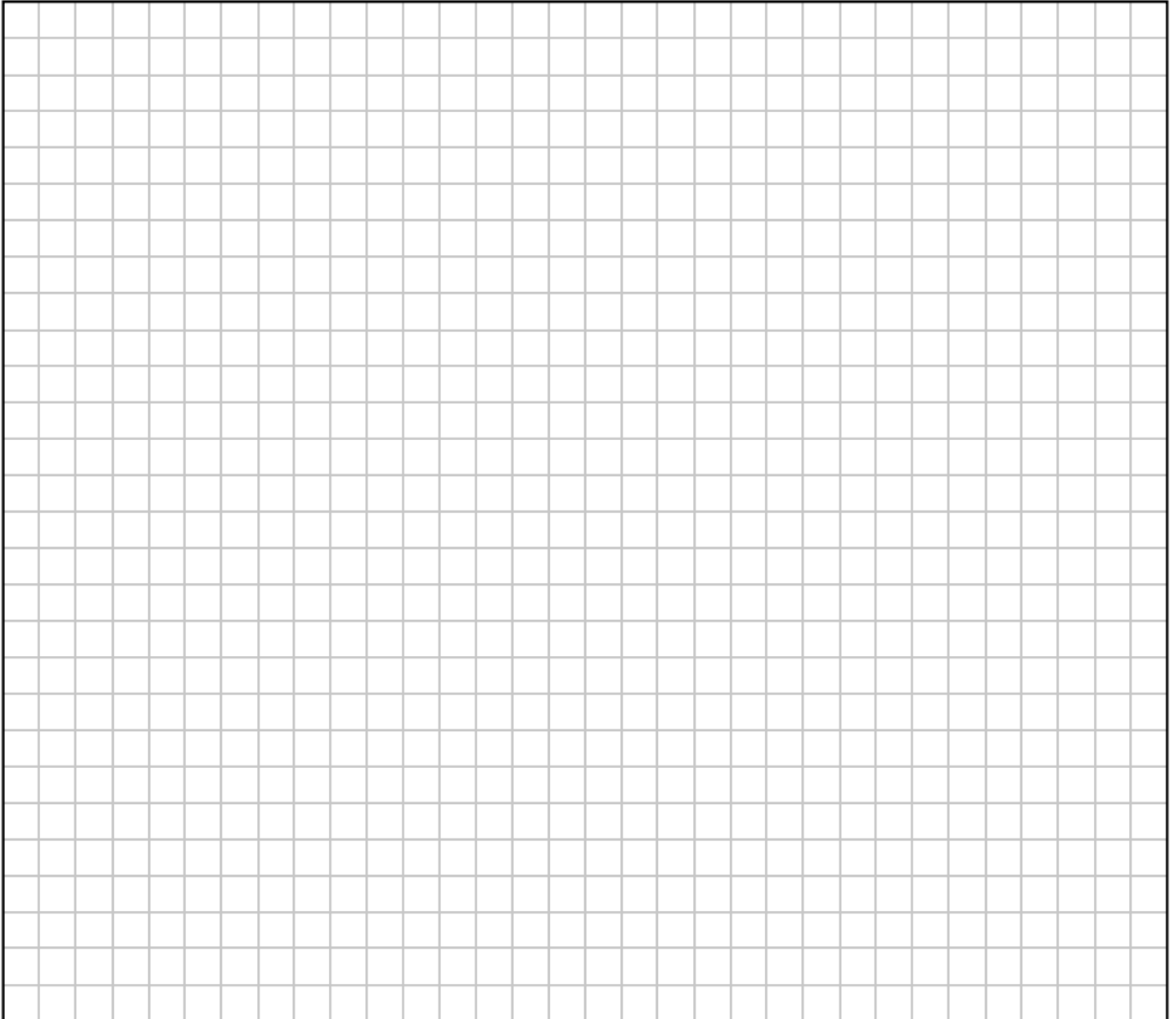$$\frac{x-1}{x} + \frac{x}{x+1} = \frac{1}{2} \qquad x \neq 0,\ x \neq -1.$$

2 ▶ 2003 LCOL Paper 1 – Question 8 (c)

Let $f(x) = x^3 + 2x^2 - 1$.

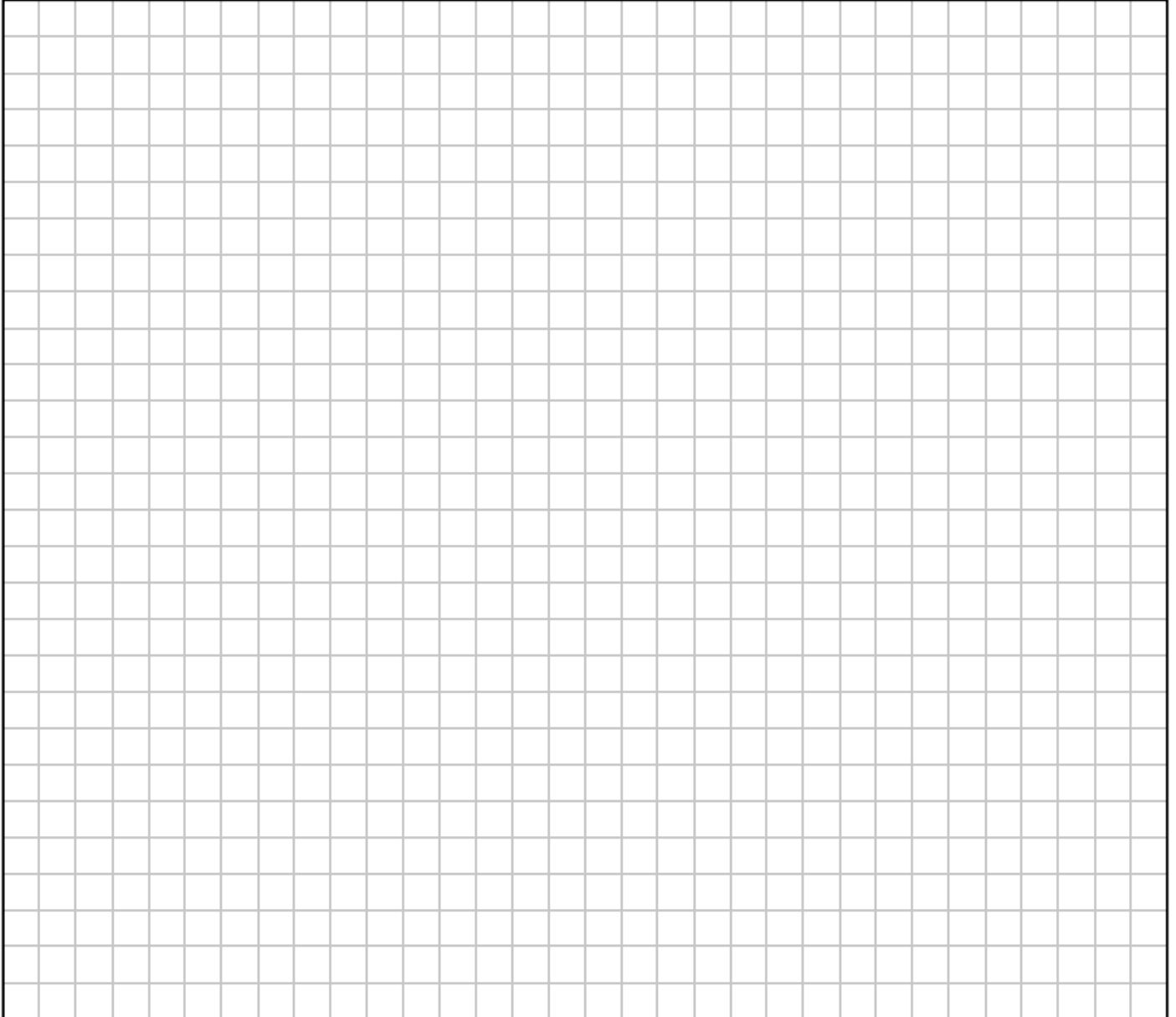L is the tangent to the curve $y = f(x)$ at $x = -\frac{2}{3}$.

Find the slope of L

3 ▶ 2011 LCHL Paper 1 – Question 5 (b)

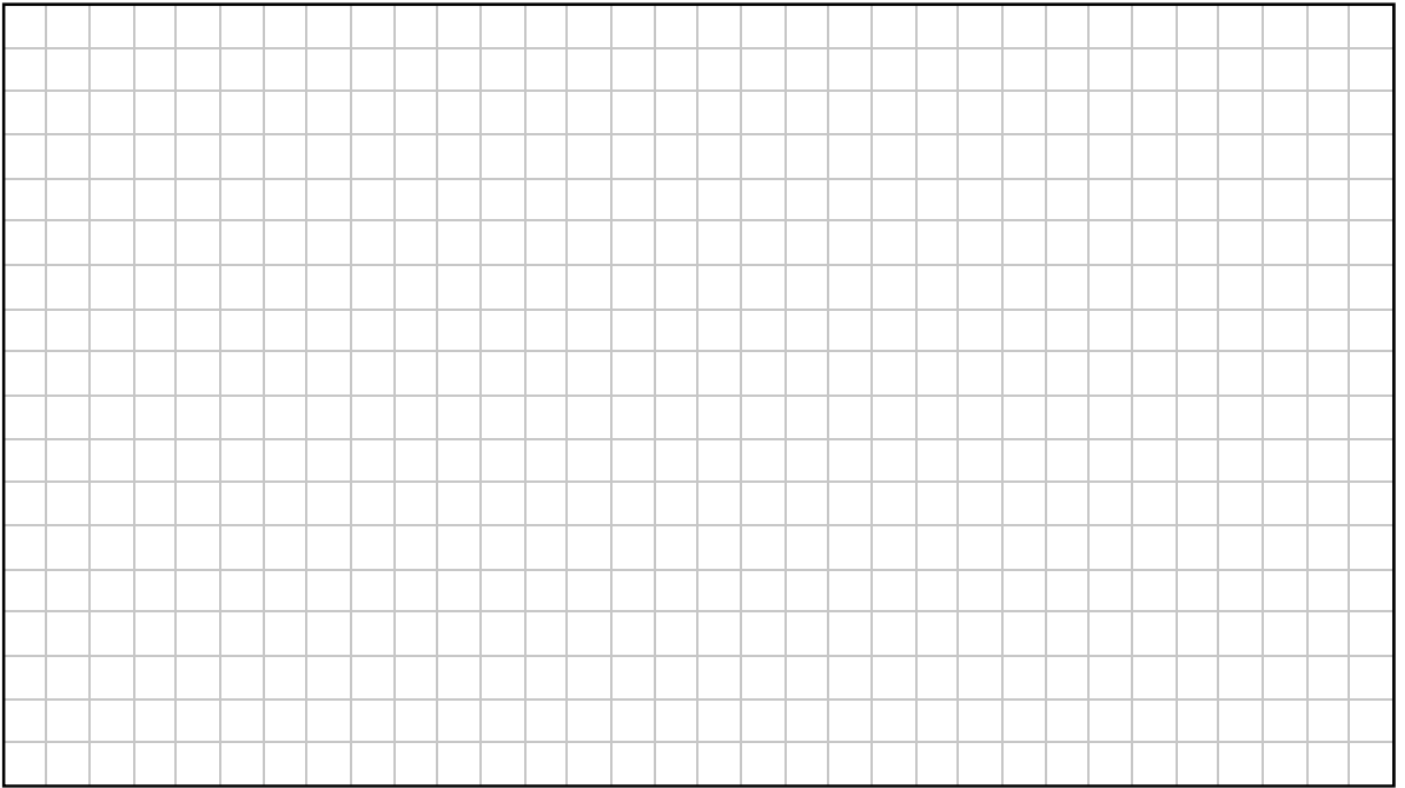The first three terms of an arithmetic series are $7 + 4 + 1 + \dots$.

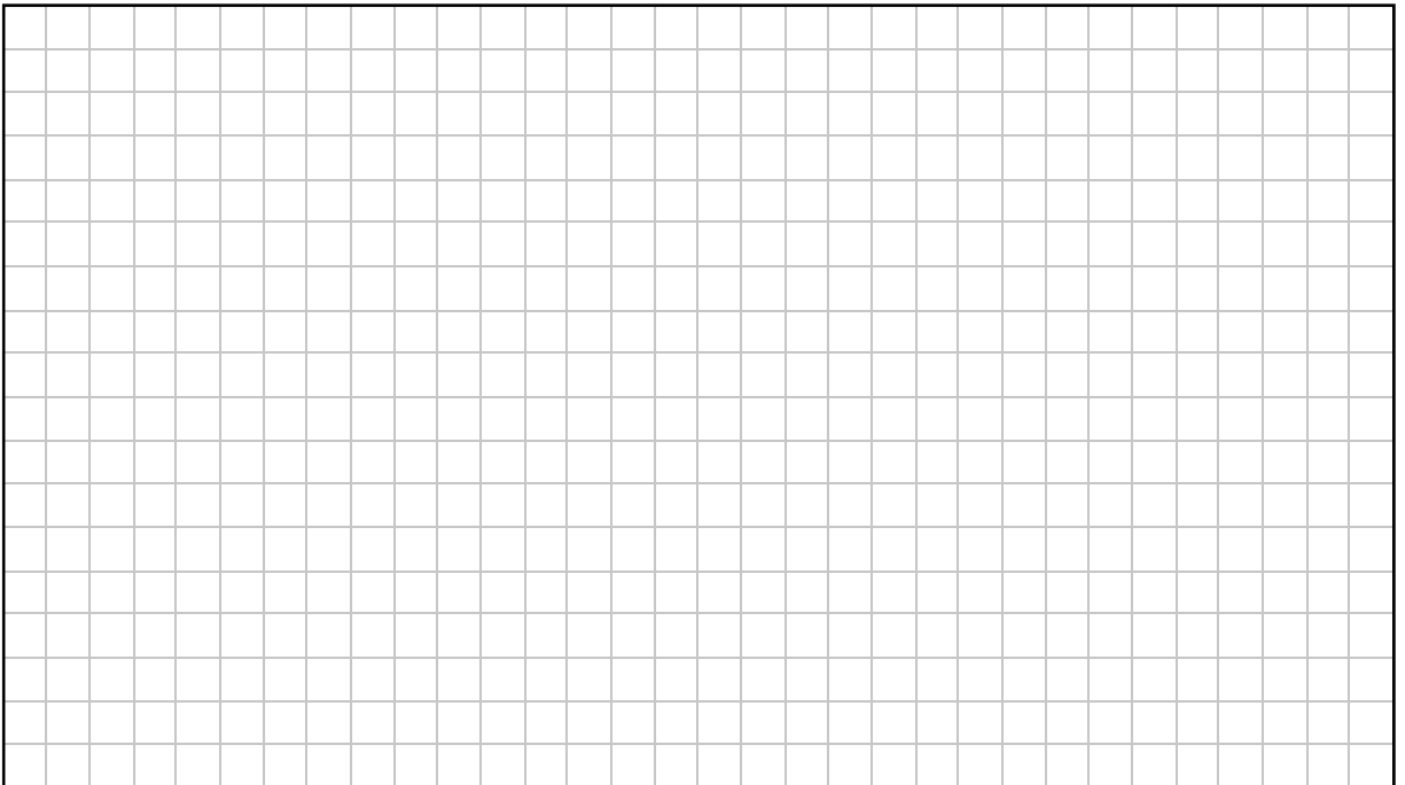Find S_{15}, the sum of the first fifteen term of the series.

A circle with centre $(0, 0)$ passes through the point $(5, -12)$.

(i)   Find the radius of the circle.

(ii)   Write down the equation of the circle.

5 ▶ 2015 LCOL Strand 1 Supplementary Paper – Question 1 (a)

A survey is being conducted of voters' opinions on several different issues.

(a) What is the overall margin of error of the survey, at 95% confidence, if it is based on a simple random sample of 1111 voters?

(b) A political party had claimed that it has the support of 24% of the electorate. Of the voters in the sample above, 243 stated that they support the party. Is this sufficient evidence to reject the party's claim, at the 5% level of significance?