GrindSpot
ONLINE GRINDS PLATFORM

LEAVING CERT 2027

LEAVING CERT MATHS

Exam Ready

Higher Level · Paper 2 · Workbook A

Dyslexia friendly
large, clear text · room to write

Built from 9 years of real Leaving Cert papers: what comes up, how it's marked, and the practice to nail it.

- **9** years of exam trends, topic by topic
- **46** topic drills with answers
- **1** full practice paper, 300 marks
- ✓ every answer worked out step by step



Know what's coming.
Walk in ready.

Original GrindSpot material written in the style of the Leaving Certificate examination. Not an official SEC paper.

What comes up

2017 to 2026

We read every Higher Level Paper 2 from the last 9 exams (there were no written exams in 2020) and noted the main topics in each question. Each number is how many questions used that topic in that year's paper; one question often uses two topics. We counted a topic for a question when at least one of its parts could not be answered without it.

	2017	2018	2019	2021	2022	2023	2024	2025	2026	Years
Trigonometry	3	2	3	3	3	5	2	3	4	9/9
Probability	3	2	2	3	3	3	4	3	3	9/9
Statistics	2	2	1	1	3	2	2	2	4	9/9
Geometry & constructions	2	1	2	1	2	1	2	2	3	9/9
Area & volume	1	1	1	1	1	2	1	2	2	9/9
Co-ordinate geometry: circle	1	1	1	1	1	2	2	2	1	9/9
Co-ordinate geometry: line	1	1	1	1	1	2	2	1	2	9/9

Darker = more questions. Source: State Examinations Commission papers, 2017 to 2026, read and grouped by GrindSpot. Every question we counted is listed at **grindspot.ie/exam-trends**. A guide to what has come up, not a prediction of what will.

Every topic, every year. All seven Paper 2 topics appeared in every paper from 2017 to 2026, so there is no safe topic to skip.

Trigonometry and probability lead. Trigonometry was needed in 28 of the 87 questions and probability in 26: two to five questions a year, often inside a Section B story.

The line and the circle: one or two questions each. Both appeared in every paper, so learn the formulae and where to find them in the *Formulae and Tables* booklet.

Statistics is growing. Four questions used it in 2026. Learn the steps for hypothesis tests and confidence intervals by heart.

TOPIC 3

Trigonometry

Worked answers →

In the real exam

Came up in 9 of 9 papers, 2017 to 2026: two to five questions every year.



Fionn's tip: Check whether your calculator is in degrees or radians before every question. For an equation like $\sin x = k$, use the CAST diagram to find all the solutions in the range.

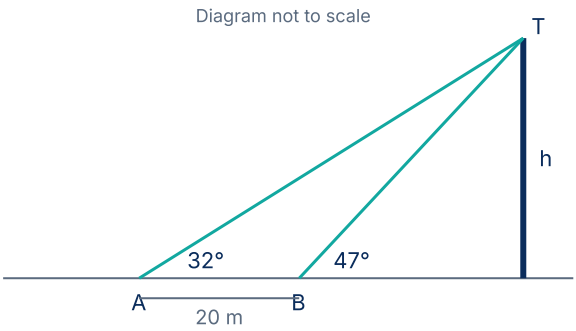
1. Solve $\tan x = \sqrt{3}$, for $0° \leq x \leq 360°$.

2. Write $135°$ in radians.

3. A sector has radius 6 cm and angle $\frac{\pi}{3}$. Find its arc length and its area, in terms of π.

Question 9 (50 marks)

A GAA club in Co. Kilkenny is planning work on its grounds.



(a) From a point A on level ground, the angle of elevation of the top T of the club's floodlight tower is $32°$. From a point B, 20 m closer to the tower, the angle of elevation is $47°$. Find the height of the tower, correct to one decimal place. 15

(b) The club's training field is a triangle with sides of length 120 m, 150 m and 200 m. Find the size of its largest angle, correct to two decimal places. 10

(c) Find the area of the field, to the nearest m². 10

(d) At the club's summer festival, the height, in metres, of a seat on a Ferris wheel t seconds after it starts is $h(t) = 20 - 18\cos\left(\frac{\pi t}{15}\right)$. Write down the period of h and the greatest and least heights of the seat. Find the first time at which the seat is 29 m above the ground. 15

Each part shows the method, the answer, its marks, and a guide to partial credit written in the style of the SEC marking schemes (our guide, not an official scheme). Full credit needs the correct answer with supporting work. In the real exam, marks are given in steps for correct work even when the final answer is wrong, so always write down your method.

Question 1 (30 marks)

(a) $P(RR) + P(BB) + P(GG) = \frac{5}{10} \cdot \frac{4}{9} + \frac{3}{10} \cdot \frac{2}{9} + \frac{2}{10} \cdot \frac{1}{9} = \frac{20+6+2}{90}$. $\frac{14}{45}$

10 marks · *Low partial credit:* one correct pair, such as $\frac{5}{10} \times \frac{4}{9}$ · *High partial credit:* all three pairs, with a slip adding them, or with replacement

(b) Independent, so $P(A \cap B) = 0{\cdot}4 \times 0{\cdot}25 = 0{\cdot}1$. $P(A \cup B) = 0{\cdot}4 + 0{\cdot}25 - 0{\cdot}1$. $0{\cdot}55$

10 marks · *Low partial credit:* finds $P(A \cap B) = 0{\cdot}1$ · *High partial credit:* correct formula, with a slip

(c) $\binom{8}{6}(0{\cdot}7)^6(0{\cdot}3)^2 = 28 \times 0{\cdot}117649 \times 0{\cdot}09$. $0{\cdot}2965$

10 marks · *Low partial credit:* writes $\binom{8}{6}$ or $(0{\cdot}7)^6$ · *High partial credit:* correct expression, wrong rounding (Full Credit −1)

Question 2 (30 marks)

(a) Mean $= \frac{63}{7} = 9$; median = 4th value = 9; $\sum(x-9)^2 = 25 + 4 + 4 + 0 + 1 + 9 + 25 = 68$, so $\sigma = \sqrt{\frac{68}{7}} = \sqrt{9{\cdot}714}$. **mean 9, median 9, $\sigma = 3{\cdot}12$**

10 marks · *Low partial credit:* one of the three values correct · *High partial credit:* mean and median correct, slip in the standard deviation

(b) $z = \frac{184-172}{8} = 1{\cdot}5$; $P(Z > 1{\cdot}5) = 1 - 0{\cdot}9332 = 0{\cdot}0668$. **6·68%**

10 marks · *Low partial credit:* finds $z = 1{\cdot}5$ · *High partial credit:* finds $P(Z < 1{\cdot}5)$ but does not subtract from 1

(c) Margin of error $\approx \frac{1}{\sqrt{400}} = 0{\cdot}05$. Interval: $12\% \pm 5\%$ **7% to 17%**

15% is inside the interval, so the survey gives no evidence against the claim (at the 5% level): it is consistent with it.

10 marks · *Low partial credit:* margin of error $\frac{1}{\sqrt{400}}$ · *High partial credit:* correct interval, but no conclusion or no reason