

Prior-knowledge relay and maths bingo for A Level Maths: answers

A Level Math Revision · A Level Maths (Year 12 and Year 13) · Teacher answers and notes

The starter is non-calculator. A calculator is needed for leg 3.

Teacher notes

- 'Find someone who...' bingo (starter): students walk round with the sheet and find a different classmate who can do each one; that classmate writes the answer and their initials. First to fill the sheet with correct answers wins. It mixes the class and shows you, at a glance, what was remembered from last year.
- Relay: teams of four sit in a row. Student 1 answers question (a) and passes the answer to student 2, who needs it for (b), and so on. The team brings you the final answer; if it is wrong, they find the broken link together. Nothing is recorded on the site.
- Afterwards, set the [baseline test](#) for a fuller picture of what each student remembers; 20 multiple-choice questions with an instant topic-by-topic report.

Starter

1. $4x^2 - 12x + 9$
 - $(2x)^2 - 12x + 9$
2. $2\sqrt{3}$
 - $6\sqrt{3}/3 = 2\sqrt{3}$
3. 3
 - $9/3 = 3$
4. $x = 2$ or $x = 3$
 - $(x - 2)(x - 3) = 0$

Task A: Leg 1: algebra

- a. 9
 - $(\sqrt[3]{27})^2 = 3^2$
- b. 4
 - $81 = 3^4$
- c. $(x + 4)^2 - 13$
 - $x^2 + 8x + 3 = (x + 4)^2 - 16 + 3$
- d. $(-4, -13)$
 - The minimum is where $x + 4 = 0$.

Task B: Leg 2: straight lines

- a. -5
 - $1 = 3 \times 2 + c$, so $c = -5$
- b. $5/3$
 - $3x - 5 = 0$

c. $-\frac{3}{5}$

- The product of perpendicular gradients is -1 .

d. $(-5, 3)$

- $-3x/5 = x + 8$ gives $-8x/5 = 8$, so $x = -5$
- $y = -5 + 8 = 3$

Task C: Leg 3: circles and triangles

a. **10**

- $\sqrt{36 + 64} = 10$

b. **4π cm**

- $72/360 \times 2\pi \times 10 = 4\pi$

c. **2**

- $2\pi r = 4\pi$

d. **104.5°**

- $\cos \theta = (2^2 + 3^2 - 4^2)/(2 \times 2 \times 3) = -1/4$
- $\theta = 104.47\dots^\circ$

Extension

1. **$(1, 0)$ and $(3, 2)$**

- $x^2 - 4x + 3 = 0$, so $(x - 1)(x - 3) = 0$

Every question is original and every answer was recomputed by computer before publishing.