

Prior-knowledge relay and maths bingo for A Level Maths

A Level Math Revision · A Level Maths (Year 12 and Year 13) · Student sheet

Name _____

Class _____

Date _____

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

Starter (5 minutes)

1. Find someone who can expand $(2x - 3)^2$.
2. Find someone who can rationalise $6/\sqrt{3}$.
3. Find someone who can find the gradient of the line through (1, 2) and (4, 11).
4. Find someone who can solve $x^2 - 5x + 6 = 0$.

Main activity (30 minutes)

Task A: Leg 1: algebra

Each answer is passed to the next person.

- a. Evaluate $27^{2/3}$. Pass on A .
- b. Solve $3^x = A^2$. Pass on $B = x$.
- c. Write $x^2 + 2Bx + 3$ in the form $(x + p)^2 + q$. Pass on p and q .
- d. Write down the coordinates of the minimum point of $y = (x + p)^2 + q$.

Task B: Leg 2: straight lines

Each answer is passed to the next person.

- a. A line has gradient 3 and passes through (2, 1). Find its y -intercept. Pass on A .
- b. Where does $y = 3x + A$ cross the x -axis? Pass on the x -coordinate as B .
- c. Find the gradient of a line perpendicular to a line of gradient B . Pass it on as C .
- d. The line through the origin with gradient C meets $y = x + 8$. Find the point where they meet.

Task C: Leg 3: circles and triangles

Each answer is passed to the next person.

- a. A right-angled triangle has shorter sides 6 cm and 8 cm. Find the hypotenuse. Pass on A .
- b. A sector has radius A cm and angle 72° . Find its arc length, in terms of π . Pass it on as $B = k\pi$.
- c. A circle has circumference B cm. Find its radius. Pass it on as C .
- d. A triangle has sides C cm, 3 cm and 4 cm. Find its largest angle, to 1 decimal place.

Extension

- 1. Solve the simultaneous equations $y = x^2 - 3x + 2$ and $y = x - 1$.