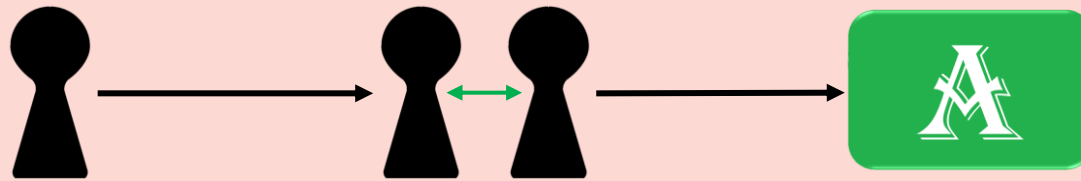


GCSE to ALevel

Week 1

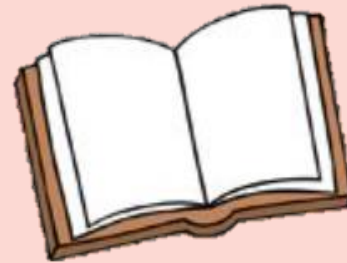


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Pen



Paper



Questions

1

$$4\frac{1}{2} \div 2\frac{2}{3} =$$

2

Simplify $\frac{(x + 1)^3}{x^2 - 1}$



Questions

3 *Factorise* $6x^2 - 9x - 6$

4 *Simplify fully* $\frac{5\sqrt{2} - 15}{5\sqrt{8} + 5}$



Questions

5 Find the value of $\left(\frac{27}{8}\right)^{\frac{2}{3}}$

6 Convert $30,000\text{cm}^2$ into m^2



Questions

7 Write $x^2 + 6x + 10$ in the form $(x + a)^2 + b$



Questions

8 Explain why $\sin^{-1}\left(\frac{5}{4}\right) = \textit{Maths error}$

9 $f(x) = 2x - 1$ $g(x) = x^2 - 3x + 5$
Find the values of x where $f(x) = g(x)$



Questions

10

*A straight line L passes through the point $(-4,4)$ and is perpendicular to the line $y = 2x - 2$
Find the equation of the straight line L .*



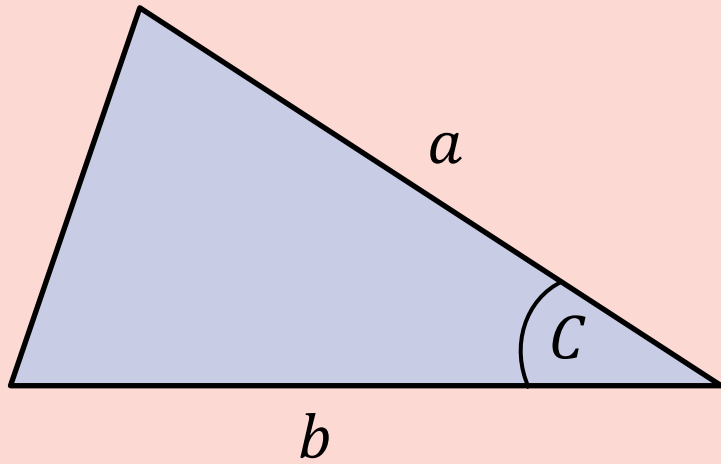
Proof

A *Prove $(n + 1)^3 - (n - 1)^3$ is even when n is an integer.*



Deriving formula

B



Prove the area of the triangle is,

$$\frac{1}{2}ab \sin C$$



Problem

c

The circle has a radius of 1cm.

Two vertices lie on the circle.

One edge of the square goes through the centre of the circle.

What is the area of the square?

