

Algebra Problems (LC) – Factorising & Simplifying

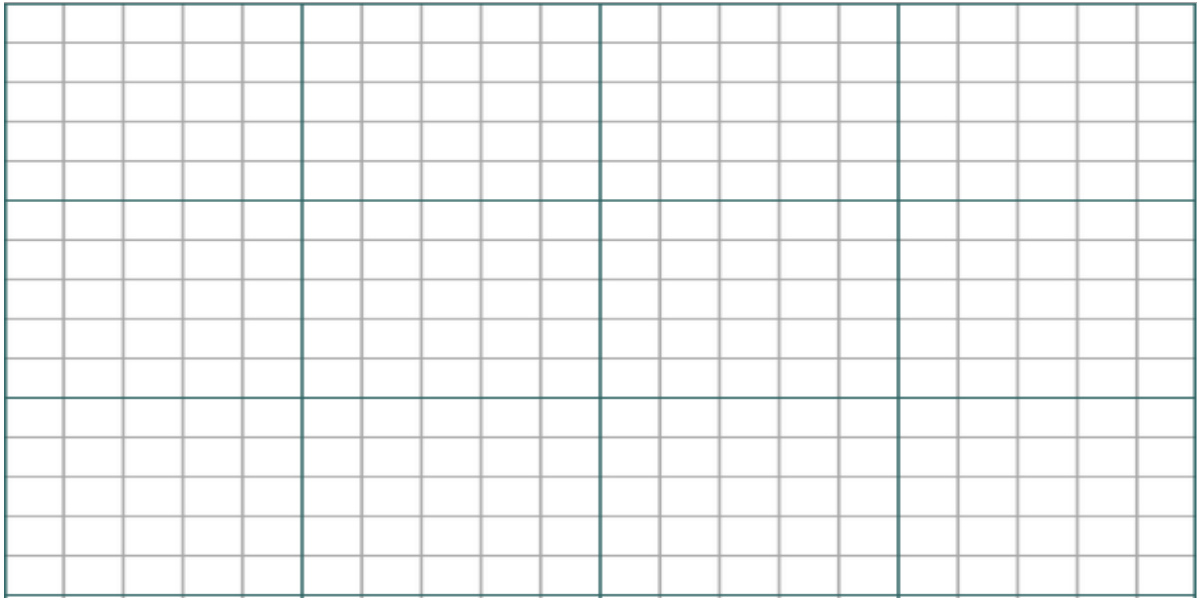
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Question 1

Verify the following:

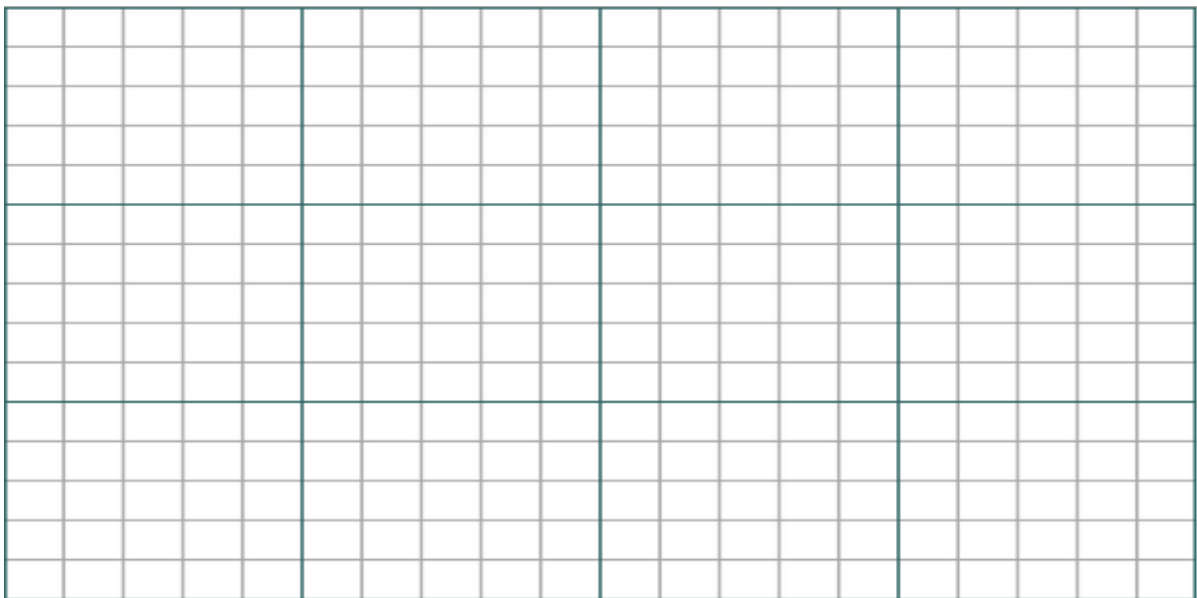
$$(x + y)(x - y) = (x^2 - y^2)$$



Question 2

Simplify the following

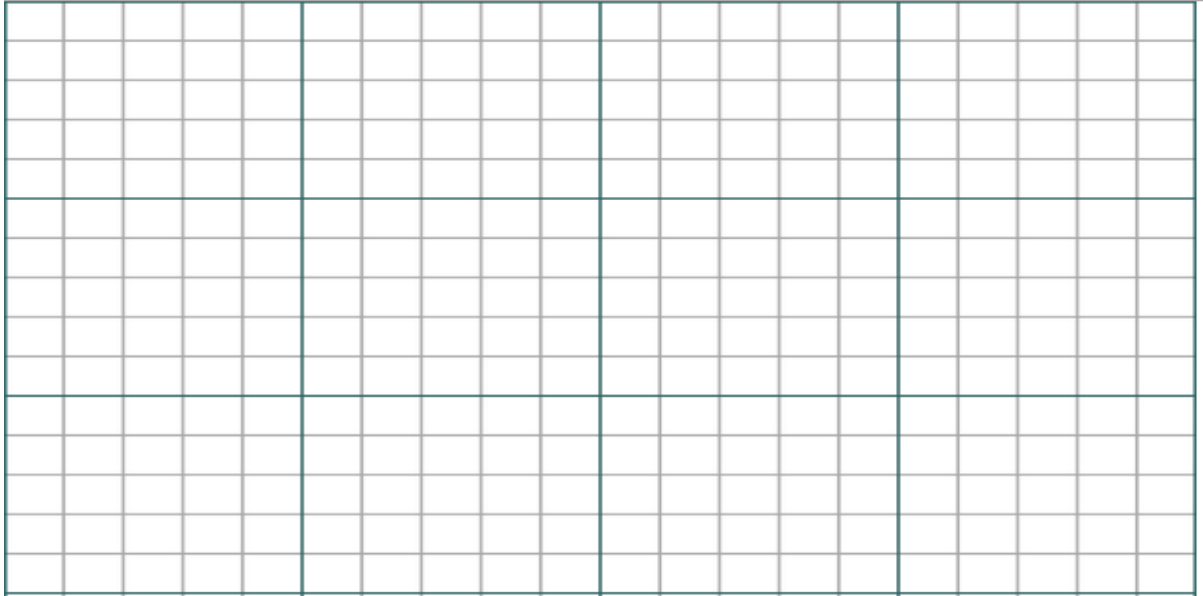
$$9x^2 - 16y^2$$



Question 3

Simplify the following

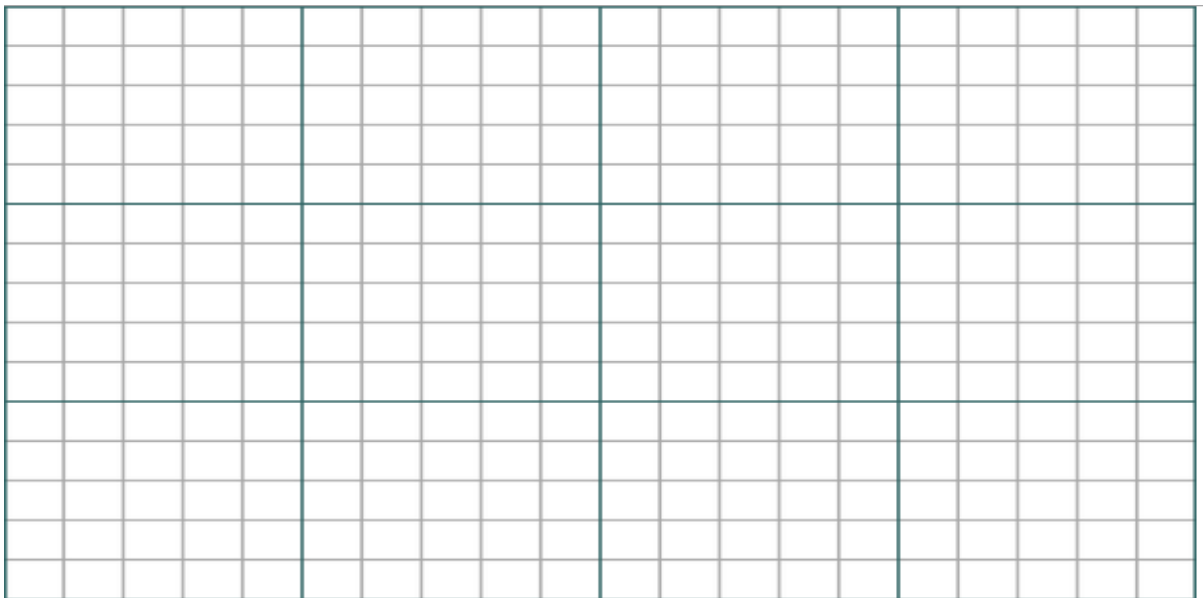
$$\frac{a^2 - 16}{a - 4}$$

A large grid for working out the simplification of the algebraic expression. The grid is 20 columns wide and 15 rows high. It is divided into four equal quadrants by a vertical line in the 10th column and a horizontal line in the 7.5th row.

Question 4

Simplify the following

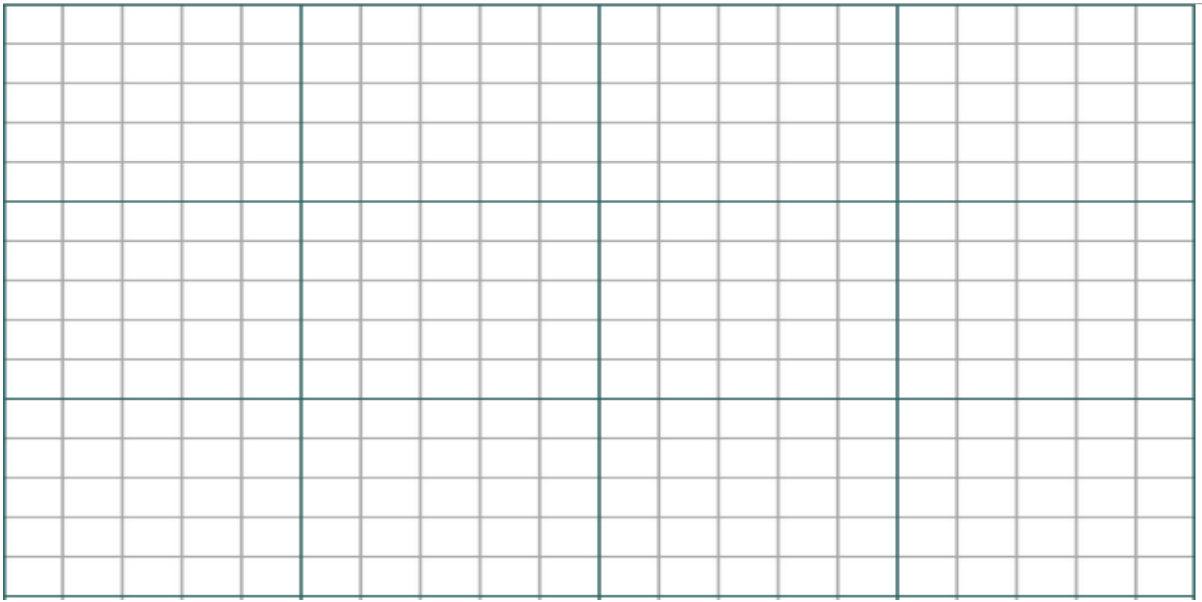
$$\frac{x^2 + 5x}{x^2 + 7x + 10}$$

A large grid for working out the simplification of the algebraic expression. The grid is 20 columns wide and 15 rows high. It is divided into four equal quadrants by a vertical line in the 10th column and a horizontal line in the 7.5th row.

Question 5

Factorise the following:

$$ax + ay + bx + by$$

A large grid for working out the factorization of the expression $ax + ay + bx + by$. The grid is 20 columns wide and 15 rows high, with a 5x5 grid of larger cells in the center.

Question 6

Simplify and factorise fully

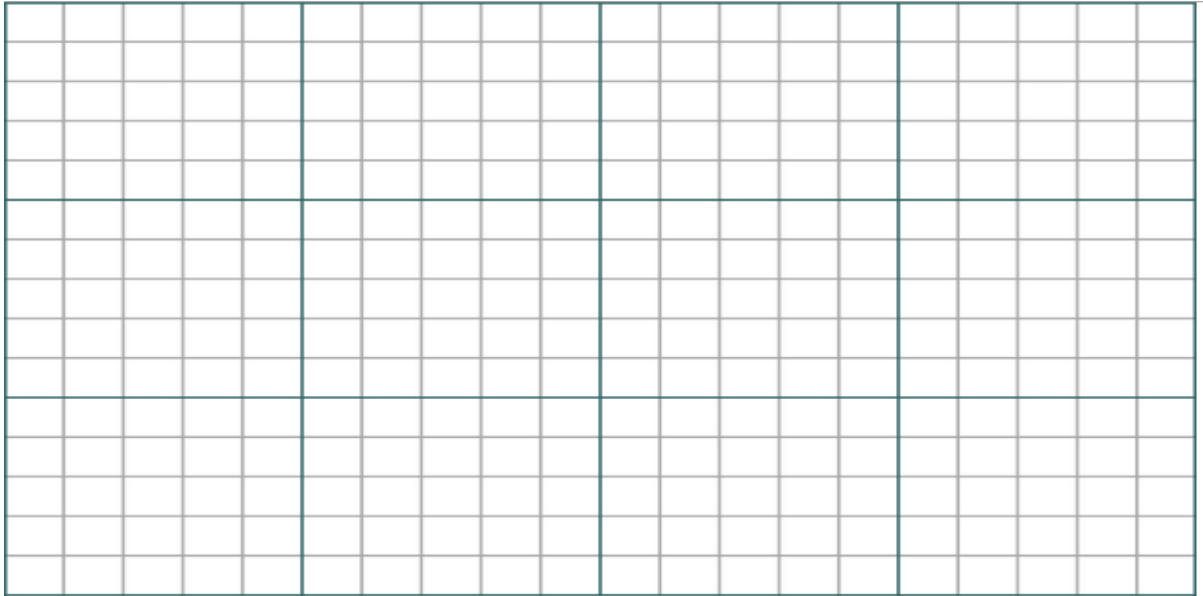
$$(2x - 1)^2 - (x - 1)^2$$

A large grid for working out the simplification and factorization of the expression $(2x - 1)^2 - (x - 1)^2$. The grid is 20 columns wide and 15 rows high, with a 5x5 grid of larger cells in the center.

Question 7

Express the following in its simplest form

$$\frac{1}{2x-3} - \frac{1}{x+3}$$



Question 8

If $f(x) = x^2 - 7x + 12$ and $f(x+1) \neq 0$ show that

$$\frac{f(x)}{f(x+1)} \text{ simplifies to } \frac{x-4}{x-2}$$

