

EXPANDING BRACKETS

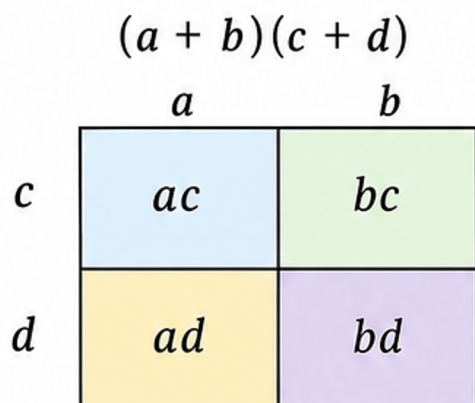
AREA MODEL GRID

KEY IDEA



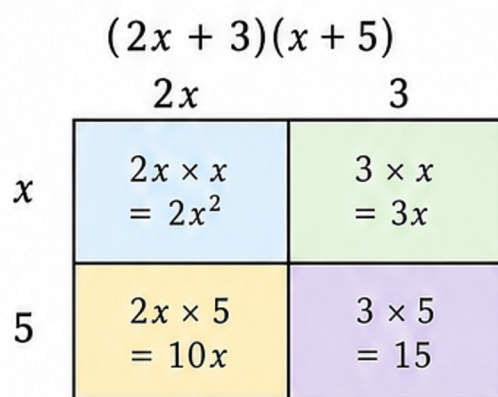
Use an area model to multiply each term in one bracket by each term in the other bracket.

THE MODEL



$$(a + b)(c + d) = ac + bc + ad + bd$$

WORKED EXAMPLE







$$(2x + 3)(x + 5) = 2x^2 + 3x + 10x + 15$$

$$= 2x^2 + 13x + 15$$

CLASSROOM VOCABULARY

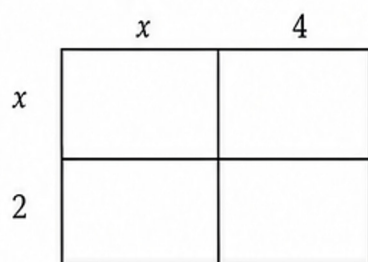
Bracket (Binomial)	An expression with two terms in brackets, e.g. $(x + 3)$.
Expand	Remove the brackets by multiplying each term.
Area Model	A grid used to multiply terms using the area of rectangles.
Term	A number, variable, or product of numbers and variables.
Like Terms	Terms with the same variable part (e.g. $2x$ and $10x$).
Constant	A term with no variable (e.g. 15).

STEPS

- Write the two expressions on the top and side. 
- Multiply each term in the row by each term in the column. 
- Write each product in its cell. 
- Add all four terms and simplify if possible. 

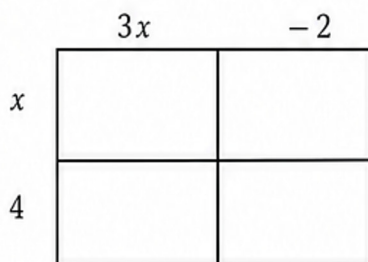
YOUR TURN – USE THE AREA MODEL GRID

1. $(x + 4)(x + 2)$



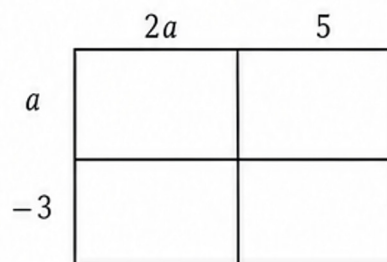
Expanded form:

2. $(3x - 2)(x + 4)$



Expanded form:

3. $(2a + 5)(a - 3)$



Expanded form:

QUICK CHECK

Expand: $(x + 1)(x + 1)$

Answer: _____