

Example: Factorise $2x^2 + 7x + 6$

1) Identify a, b, and c.

$$\begin{array}{ccc} a & b & c \\ 2x^2 & +7x & +6 \end{array}$$

2) Multiply ac.

$$2 \times 6 = 12$$

3) Write the factors of ac. Which factor pair adds to make b?

$$\begin{array}{cc} \underline{12} & \\ 1 & 12 \\ 2 & 6 \\ 3 & 4 \end{array} \quad 3 + 4 = 7$$

$$2x^2 + 7x + 6 = 2x^2 + 4x + 3x + 6$$

4) Fill in the grid with these terms.

$2x^2$	$+4x$
$+3x$	$+6$

5) Factorise a row or column and fill in the reverse grid.

	x	$+2$
$2x$	$2x^2$	$+4x$
$+3$	$+3x$	$+6$

6) Read your brackets from reverse grid.

$$(2x + 3)(x + 2)$$

a) Factorise $3x^2 + 8x + 4$

1) Identify a, b, and c.

$$\begin{array}{ccc} a & b & c \\ 3x^2 & +8x & +4 \end{array}$$

2) Multiply ac.

$$3 \times 4 = 12$$

3) Write the factors of ac. Which factor pair adds to make b?

$$\begin{array}{cc} \underline{12} & \\ 1 & 12 \\ 2 & 6 \\ 3 & 4 \end{array} \quad 2 + 6 = 8$$

$$3x^2 + 8x + 4 = 3x^2 + 2x + 6x + 4$$

4) Fill in the grid with these terms.

$3x^2$	$+2x$
$+6x$	$+4$

5) Factorise a row or column and fill in the reverse grid.

	$3x^2$	$+2x$
	$+6x$	$+4$

6) Read your brackets from reverse grid.

$$(\quad) (\quad)$$

b) Factorise $5x^2 + 12x - 9$

1) Identify a, b, and c.

$$\begin{array}{ccc} a & b & c \\ 5x^2 & +12x & -9 \end{array}$$

2) Multiply ac.

$$5 \times -9 = -45$$

3) Write the factors of ac. Which factor pair adds to make b?

$$\begin{array}{ccc} & \underline{-45} & \\ -1 & 45 & 1 & -45 \\ -3 & 15 & 3 & -15 & -3+15=12 \\ -5 & 9 & 5 & -9 \end{array}$$

$$5x^2 + 12x - 9 =$$

4) Fill in the grid with these terms.

5) Factorise a row or column and fill in the reverse grid.

6) Read your brackets from reverse grid.

$$(\quad) (\quad)$$

c) Factorise $2x^2 + 5x - 3$

1) Identify a, b, and c.

$$\begin{array}{ccc} a & b & c \\ 2x^2 & + 5x & - 3 \end{array}$$

2) Multiply ac.

$$2x \cdot -3 = -6$$

3) Write the factors of ac. Which factor pair adds to make b?

$$\underline{-6}$$

$$2x^2 + 5x - 3 =$$

4) Fill in the grid with these terms.

5) Factorise a row or column and fill in the reverse grid.

6) Read your brackets from reverse grid.

$$(\quad) (\quad)$$

d) Factorise $3x^2 + 17x + 20$

1) Identify a, b, and c.

$$\begin{array}{ccc} a & b & c \\ 3x^2 & + 17x & + 20 \end{array}$$

2) Multiply ac.

3) Write the factors of ac. Which factor pair adds to make b?

$$3x^2 + 17x + 20 =$$

4) Fill in the grid with these terms.

5) Factorise a row or column and fill in the reverse grid.

6) Read your brackets from reverse grid.

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e) Factorise $3x^2 + 8x - 16$

1) Identify a, b, and c.

2) Multiply ac.

3) Write the factors of ac. Which factor pair adds to make b?

4) Fill in the grid with these terms.

5) Factorise a row or column and fill in the reverse grid.

6) Read your brackets from reverse grid.

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