

The diagram shows a 10x10 grid of squares. The main diagonal, from the top-left to the bottom-right, is highlighted with a thicker line. Black squares are placed at various positions, representing non-zero elements in a matrix. The pattern is symmetric about the main diagonal. In addition to the diagonal, there are black squares in the upper and lower triangular regions, suggesting a banded or sparse matrix structure. Specifically, there are black squares at positions (i, j) where |i - j| is 0, 1, 2, or 3, and at some positions further from the diagonal, such as (1, 4), (4, 1), (2, 5), (5, 2), (3, 6), (6, 3), (4, 7), (7, 4), (5, 8), (8, 5), (6, 9), (9, 6), and (7, 10), (10, 7).

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A 10x20 grid of squares. The squares are arranged in 10 rows and 20 columns. Some squares are missing, creating a sparse pattern. The missing squares are located at the following (row, column) coordinates (starting from 0,0 at the top-left):

- Row 0: (0, 8), (0, 9), (0, 18), (0, 19)
- Row 1: (1, 3), (1, 4), (1, 18), (1, 19)
- Row 2: (2, 3), (2, 4), (2, 18), (2, 19)
- Row 3: (3, 0), (3, 1), (3, 2), (3, 3), (3, 4), (3, 5), (3, 6), (3, 7), (3, 8), (3, 9), (3, 10), (3, 11), (3, 12), (3, 13), (3, 14), (3, 15), (3, 16), (3, 17), (3, 18), (3, 19)
- Row 4: (4, 0), (4, 1), (4, 2), (4, 3), (4, 4), (4, 5), (4, 6), (4, 7), (4, 8), (4, 9), (4, 10), (4, 11), (4, 12), (4, 13), (4, 14), (4, 15), (4, 16), (4, 17), (4, 18), (4, 19)
- Row 5: (5, 0), (5, 1), (5, 2), (5, 3), (5, 4), (5, 5), (5, 6), (5, 7), (5, 8), (5, 9), (5, 10), (5, 11), (5, 12), (5, 13), (5, 14), (5, 15), (5, 16), (5, 17), (5, 18), (5, 19)
- Row 6: (6, 0), (6, 1), (6, 2), (6, 3), (6, 4), (6, 5), (6, 6), (6, 7), (6, 8), (6, 9), (6, 10), (6, 11), (6, 12), (6, 13), (6, 14), (6, 15), (6, 16), (6, 17), (6, 18), (6, 19)
- Row 7: (7, 0), (7, 1), (7, 2), (7, 3), (7, 4), (7, 5), (7, 6), (7, 7), (7, 8), (7, 9), (7, 10), (7, 11), (7, 12), (7, 13), (7, 14), (7, 15), (7, 16), (7, 17), (7, 18), (7, 19)
- Row 8: (8, 0), (8, 1), (8, 2), (8, 3), (8, 4), (8, 5), (8, 6), (8, 7), (8, 8), (8, 9), (8, 10), (8, 11), (8, 12), (8, 13), (8, 14), (8, 15), (8, 16), (8, 17), (8, 18), (8, 19)
- Row 9: (9, 0), (9, 1), (9, 2), (9, 3), (9, 4), (9, 5), (9, 6), (9, 7), (9, 8), (9, 9), (9, 10), (9, 11), (9, 12), (9, 13), (9, 14), (9, 15), (9, 16), (9, 17), (9, 18), (9, 19)

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A 6x25 grid of squares representing a sparse matrix. The squares are arranged in a pattern that suggests a banded structure with some additional non-zero elements.

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