

The Loco-motion

$$1 = E^b$$

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The figure shows four diagrams, each representing a step in the construction of a 2-adic integer. Each diagram consists of two rows of elements separated by a vertical line. The top row contains integers, and the bottom row contains 2-adic integers represented by horizontal bars. The length of the bar indicates the 2-adic valuation.

- Diagram 1:** Top row: 4, 5, 4, 5, 6, 5, 4. Bottom row: 4. The bar for 4 has a length corresponding to 2^2 .
- Diagram 2:** Top row: 4, 5, 4, 5, 6, 5, 4. Bottom row: 2, 2, 1, 2, 1. The bars for 2 have a length corresponding to 2^1 , and the bar for 1 has a length corresponding to 2^0 .
- Diagram 3:** Top row: 4, 5, 4, 5, 6, 5, 4. Bottom row: 4, 2, 1, 2, 1. The bar for 4 has a length corresponding to 2^2 , and the bar for 2 has a length corresponding to 2^1 .
- Diagram 4:** Top row: 4, 5, 4, 5, 6, 5, 4. Bottom row: 3, 2, 1, 2, 1. The bar for 3 has a length corresponding to 2^0 , and the bar for 2 has a length corresponding to 2^1 .

The diagrams show the construction of the Young diagram for the partition (6, 5, 3, 2, 1) in four steps:

- Diagram 1:** A single cell in the first row.
- Diagram 2:** Two cells in the first row, one cell in the second row.
- Diagram 3:** Three cells in the first row, two cells in the second row, one cell in the third row.
- Diagram 4:** Four cells in the first row, three cells in the second row, two cells in the third row, one cell in the fourth row.

6 5 5 6 5

5^7

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$$2. \left[\begin{array}{c|c} \begin{array}{cccc} & & & 1 \\ 5 & 5 & & 5 & 5 \\ & & & & \end{array} & \begin{array}{ccccc} & & & & 6 & 6 & 6 & 6 & 6 \\ & & & & & & & & 5 \end{array} \\ \hline 1 & 6^- \end{array} \right]$$

$$3. \left[\begin{array}{c|c} \begin{array}{cccc} & & & 1 & 1 \\ 5 & 5 & & 5 & 5 \\ & & & & \end{array} & \begin{array}{ccccc} & & & & 6 & 6 & 6 & 6 & 6 \\ & & & & & & & & 5 \end{array} \\ \hline 1 & 6^- \end{array} \right]$$

$$\left[\begin{array}{c|c} \begin{array}{ccccccc} & & & & 6 & & 6 & 6 & 6 & 6 & 6 \\ 5 & 5 & & 5 & 5 \\ & & & & & & & & & & \end{array} & \\ \hline 1 & 6^- \end{array} \right]$$