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Gomes, Luis Teia

Pythagoras triples explained via central squares.

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Summary: Very much like today, the Old Babylonians (20th to 16th centuries BC) had the need to understand and use what is now called the Pythagoras' theorem $x^2 + y^2 = z^2$. They applied it in very practical problems such as to determine how the height of a cane leaning against a wall changes with its inclination. In this paper, Luis Teia Gomes presents an alternative method that uses squares rather than circles to geometrically describe the Pythagorean triples, and how they are interconnected. The triangles formed by the triples in Pythagoras' or Plato's families can be geometrically interconnected via intermediate central squares – this forms the basis of the central square theory. This pattern of parent – child triple relationship allowed the geometric construction of both sequences, which seem to behave in a similar manner. From the perspective of central square theory, the Pythagoras' or Plato's families are expressed not only as a sequence of triples, but also by their connecting sequence of squares. (ERIC)

Classification: F60 G40 A30

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