

What's my rule?

Numbers		1	2	3	4	5	6	7	8	9
	Squares	1	4	9	16	25	36	49	64	81
1	1	2	5	10	17	26	37	50	65	82
2	4		8	13	20	29	40	53	68	86
3	9			18	25	34	45	58	73	90
4	16				32	41	52	65	80	97
5	25					50	61	74	89	106
6	36						72	85	100	117
7	49							98	113	130
8	64								128	145
9	81									162

This is a table to use for a game called "What's my rule?" This game will help students understand the concept of adding squares and their square roots. This makes a good way to begin a lesson on the Pythagorean theorem.

How to play the game:

1. Give the students a copy of this list of numbers:
2 5 8 10 13 17 18 20 25 26 29 34 37 40 41 45 50 52 53 58 61 65 68 72 73 74
80 82 85 86 89 90 97 98 100 106 113 117 128 130 145 162
2. Ask a student to give you one of these numbers.
3. Find the number in the table above and use the "squares" part of the table to tell students two numbers that add up to that number.
4. Continue the game, asking different students for numbers and responding with pairs of squares, until a student says "rule" and can state the rule correctly. (That is, that the two numbers you reply with are squares that add up to the number the student offered.)
5. Start the game over, asking another student for a number from the list. This time, reply with the pair of single digit numbers (from the "numbers" part of the table) whose squares add to the number the student gave. Continue until a student figures out the new rule.

Note: There are as many versions of this game as there are mathematical rules to use. You can easily think of versions of this game with rules that will introduce other concepts.