

Notes:

Decoding Hieroglyphics by Dr. Janet Barnett, CSU-Pueblo

Key: _____ represents 1 _____ represents 10

Symbol _____ is translated “parts” and indicates a unit fraction

Symbol _____ represents “sum” or “total”

Symbol _____ can be translated as “squared”



Muhammad ibn Musa al-Khwarizmi's Algebra: What's the big deal?

On multiplying: "For instance, ten and one multiplied by ten and two. Ten times ten is a hundred, once ten is ten positive, twice ten is twenty positive, and once two is two positive; this all together makes a hundred and thirty two."

Ex #1 "Ten and two, to be multiplied by ten less one."

Ex #2 "Ten minus thing to be multiplied by ten minus thing."

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Gnomons and Pythagorean Triples

Figure 1

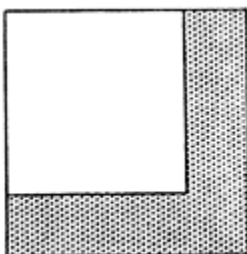
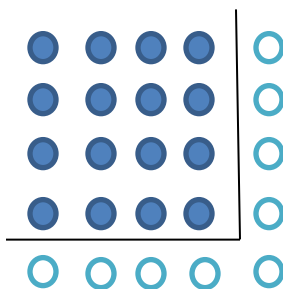


Figure 2



- (a) Figure 3 shows the square number $12^2 = 144$. Add a gnomon to that square. What Pythagorean triple (a, b, c) is represented by the completed diagram?
- (b) Figure 4 shows the square number $8^2 = 64$. Does adding a gnomon to that square give us a Pythagorean triple (a, b, c) ? Explain why or why not.

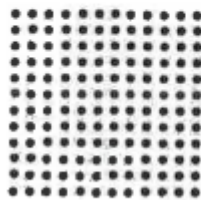


Figure 3

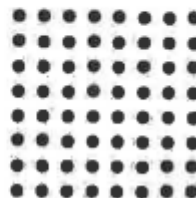


Figure 4