"*n is a congruent number if and only if there exists a rational square q smaller than n such that:* $core(n-q) = core(n+q)$ "

An example is: $n = 34, \quad q = 16.$

$34 - 16 = 18 = 2 * 9, \quad 34 + 16 = 50 = 2 * 25$

Another example is: $n = 7, \quad q = \left(\dfrac{7}{5}\right)^2$

$$n - q = 14 * \left(\frac{3}{5}\right)^2 \quad ; \quad n + q = 14 \left(\frac{4}{5}\right)^2$$

Extending the core2() function to Q over the numerator and denominator.

Triangle with area n:

$$\left(\frac{g}{p},\ \frac{2np}{g},\ \frac{(g^2+2p^4)}{pg}\right)$$

With $g^2 = n^2 - p^4$ *and* $q = p^2$

Example $n = 7,\ g = 168/25,\ p = 7/5.$

$$\text{Triangle}\left(\frac{24}{5},\ \frac{35}{12},\ \frac{337}{60}\right),\ area = 7$$