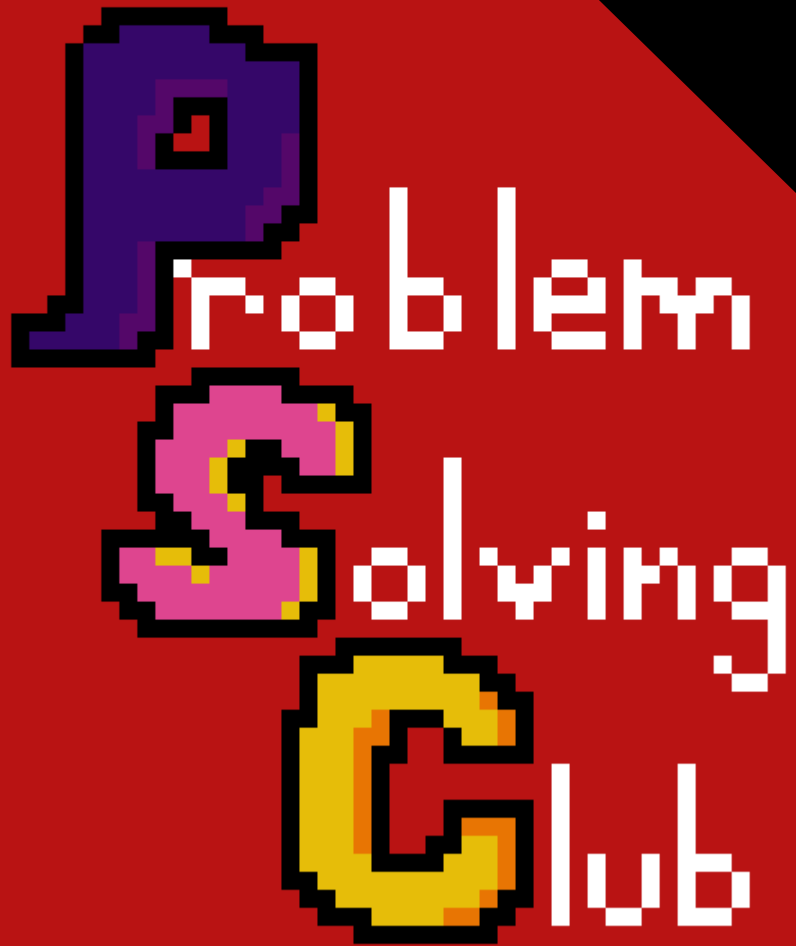


9 March 2022



Diophantine Equations

Diophantus' *Arithmetica*

DIOPHANTI
ALEXANDRINI
ARITHMETICORVM
LIBRI SEX,
ET DE NVMERIS MVLTANGVLIS
LIBER VNVS.

*CVM COMMENTARIIS C. G. BACHETI V. C.
& obseruationibus D. P. de FERMAT Senatoris Tolosani.*

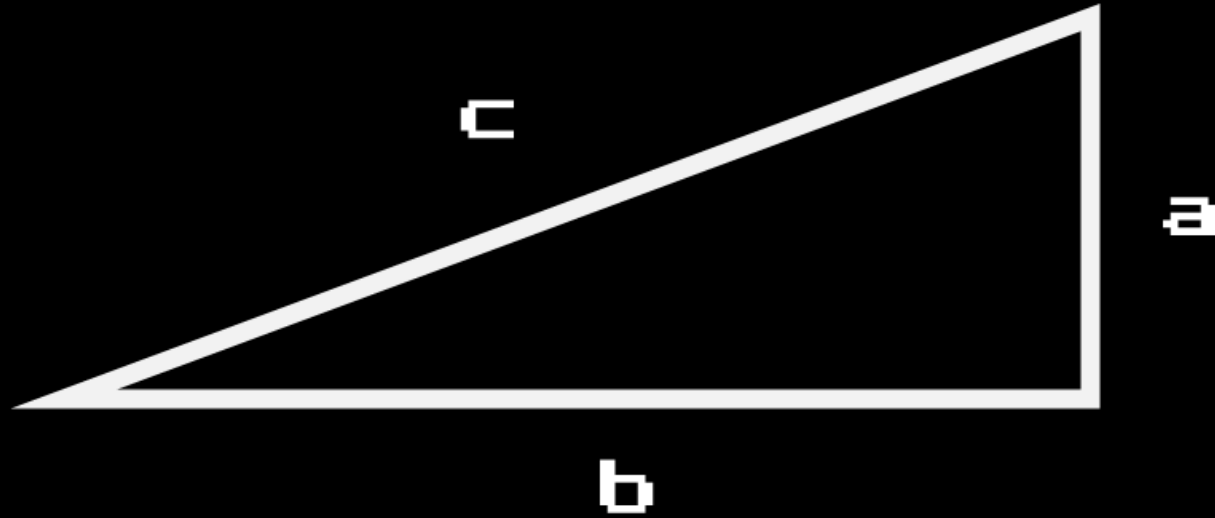
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ex varijs eiusdem D. de FERMAT Epistolis.



Excudebat BERNARDVS BOSCH, è Regione Collegij Societatis Iesu.

M. DC. LXX.

Pythagorean Triples



$$a^2 + b^2 = c^2$$

Week 18 – Mar 9



1. a , b , and c are positive integers that satisfy

$$\frac{31}{72} = \frac{a}{8} + \frac{b}{9} - c$$

What is the smallest possible value of b ?

2. m and n are positive integers such that

$$m^2 + 3m^2n^2 = 30n^2 + 517$$

What is $3m^2n^2$?

3. A school has a rectangular array of chairs. Each chair has one of either a student, a bag, or a coat. There are exactly 14 students in each row and 10 bags in each column. If exactly 3 chairs have a coat on them, prove that there are at least 567 chairs at the school.