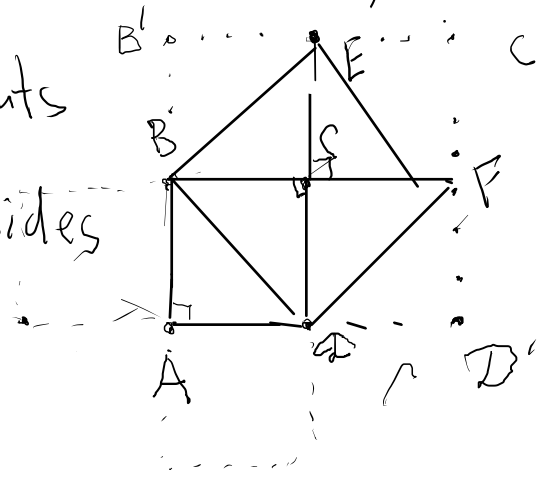
Problem: to double a given square (to get a new sq. 2 times bigger than the given sq.)

$A'B'C'D' = 4ABCD$

A, B, C, D: Points

AB, BC, CD, ~~AD~~: Sides

ABCD: Square



Plato, Menon

$\angle BCD$

Construction:

1. Continue BC to BF, CF = BC
2. Cont. DC to to DE, DC = CE
3. Produce sides BE, EF, DF

$\square BEFD = 2 \times ABCD$

Proof:

1) $\triangle ABD = \triangle ABCD = \triangle BCE = \triangle ECF = \triangle FCD = \triangle$

2) $\square ABCD = 2 \times \triangle$

$\square BEFD = 4 \times \triangle$ | $2 \times 2 = 4$

$\boxtimes$

product

$AB \times BC =$

measure: length: numbers

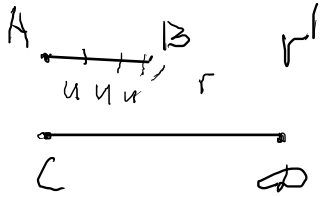
area:

isosceles

metric

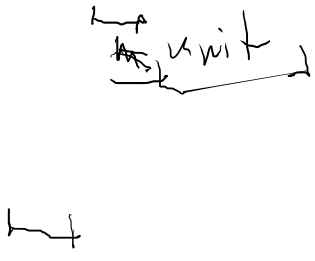
3

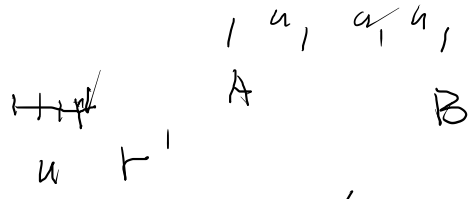
$\ell(AB)$: number



approximation

$\ell_u(AB) = 3u + r = 12r + r = 13r$



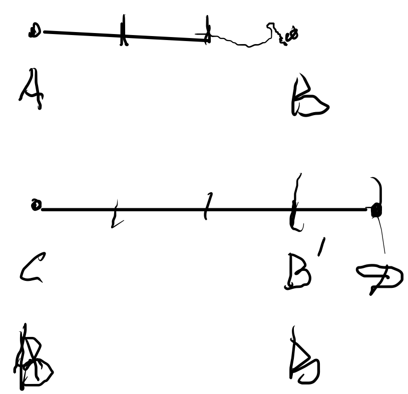


Euclidean algorithm.

(r)

$u = 4r$

Problem: Find common measure of two given straight segments (measure it is what measures exactly!)



$B'D = r$

$AB + CD$