



Euclidian Algebra and Calculation 1

Medium length activity

The Ancient Greeks were skilled mathematicians who devised interesting number and algebra problems which were to be solved using only a pencil, a straight edge and a pair of compasses.

Numerical values were represented by straight lines of a given length.

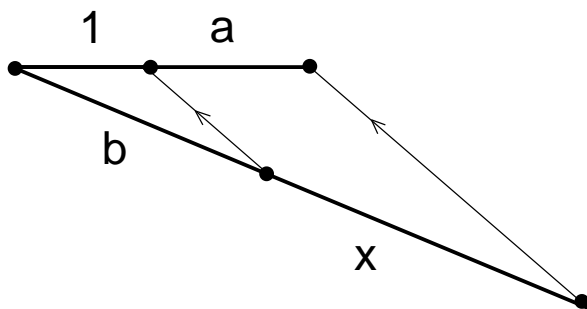
For example, if a length such as this is  said to be of length '1', then a line twice its length  would have a value of '2'.

Random lengths are used to represent unknown values e.g.

a  b 

Knowing this, can you construct a length of $(a + b)$? What about $(b - a)$?

Can you work out what the length of the following unknown value 'x' is in terms of a and b?



Using a similar idea, construct lengths of:

$$a^2$$

$$a \div b$$

$$a^2 \div b$$

What other algebraic combinations is it possible to construct?

Are there any which it is not possible to construct?
