## Short 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 then a line twice its length
$\qquad$
$\qquad$
said to be of length ' 1 ', would have a value of ' 2 '.

Random lengths are used to represent unknown values e.g.
a
b
$\qquad$

In the following diagram, a semi-circle is shown with centre o.
Lengths of $a, x$ and 1 are marked, with the diameter being $a+1$ and $x$ being the perpendicular height of the semi-circle a distance of 1 unit from the circumference.

What is the unknown value ' $x$ ' in terms of $a$ ?


