WORK SHEET BOOK －**1** (A cube and sides are equal to a number.)

Student no.:- Grade :-

Name:-

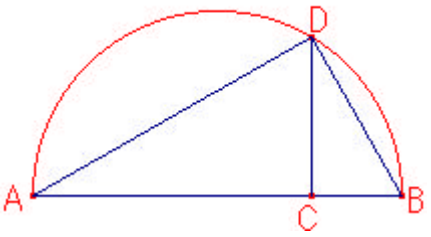
1. Proposition :14 Two mean proportion. (Euclid book2)

AC=a

BC=b

DC=x

$X^2 = a \cdot b$



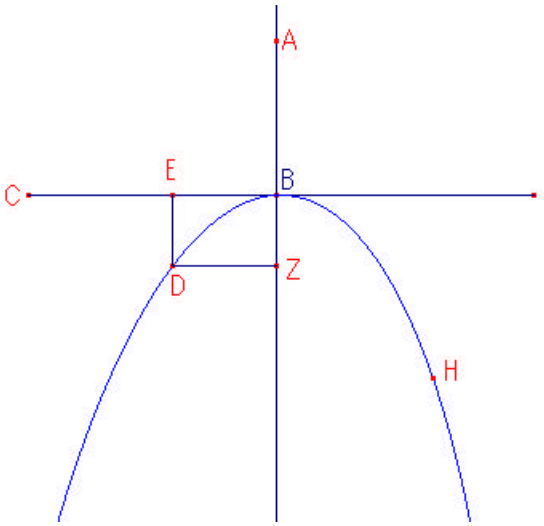
②. How to draw a parabola :

AB = parameter

BZ = diameter

DZ = ordinate

$DZ^2 = AB \cdot BZ$



3 Solid :

Area of the square $AB = AB^2 = b$

$AB = \sqrt{b}$

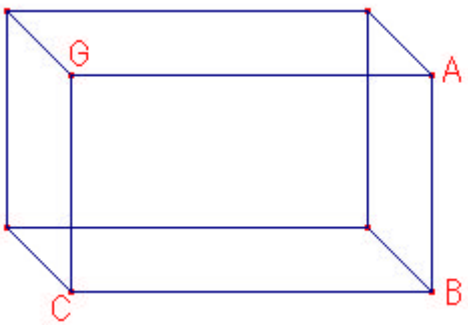
$AB^2 = b$

Volume of the solid is a

i.e. $AB^2.BC = a$

Height $BC = \frac{a}{b}$

$BC \perp AB$



4. A CUBE AND SIDES EQUAL TO A NUMBER :

i.e. $x^3+bx = a$

AB = $\sqrt{b}$

$AB^2=b$

$AB^2.BC=a$

BC=$\frac{a}{b}$

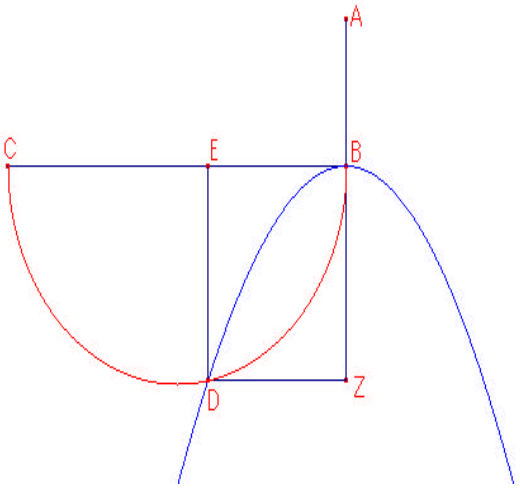
DBH , a parabola,

AB = parameter

BZ = diameter

DZ = ordinate

DZ^2 = ☐



☐ : DZ = DZ : ☐

$DZ \perp BZ$ and $DE \perp BC$

i.e. DZ = EB and BZ = ED

Therefore, AB : BE = BE : ED

$$\frac{BE}{ED}=\frac{AB}{BE} \quad \text{----------1}$$

But from the theorem of two mean proportion BE : ED = ED : ☐

$$\frac{ED}{EC}=\frac{BE}{ED} \quad \text{----------2}$$

Now from the equation 1 and 2, we get

$$\frac{AB}{BE}=\frac{BE}{ED}=\frac{ED}{EC}$$

$$\left(\frac{AB}{BE}\right)^2=\frac{BE}{ED}\times \square$$

$$\left(\frac{AB}{BE}\right)^2=\square$$

$BE^3 = AB^2 . EC$

$AB^2.EC + \square = BE^3 + \square$

$AB^2 . BC = BE^3 + \square$

Set $BE = x$ $AB^2 = b$、 $BC = \frac{a}{b}$

$b.\frac{a}{b} = x^3 + \square$

$a = x^3 + bx.$