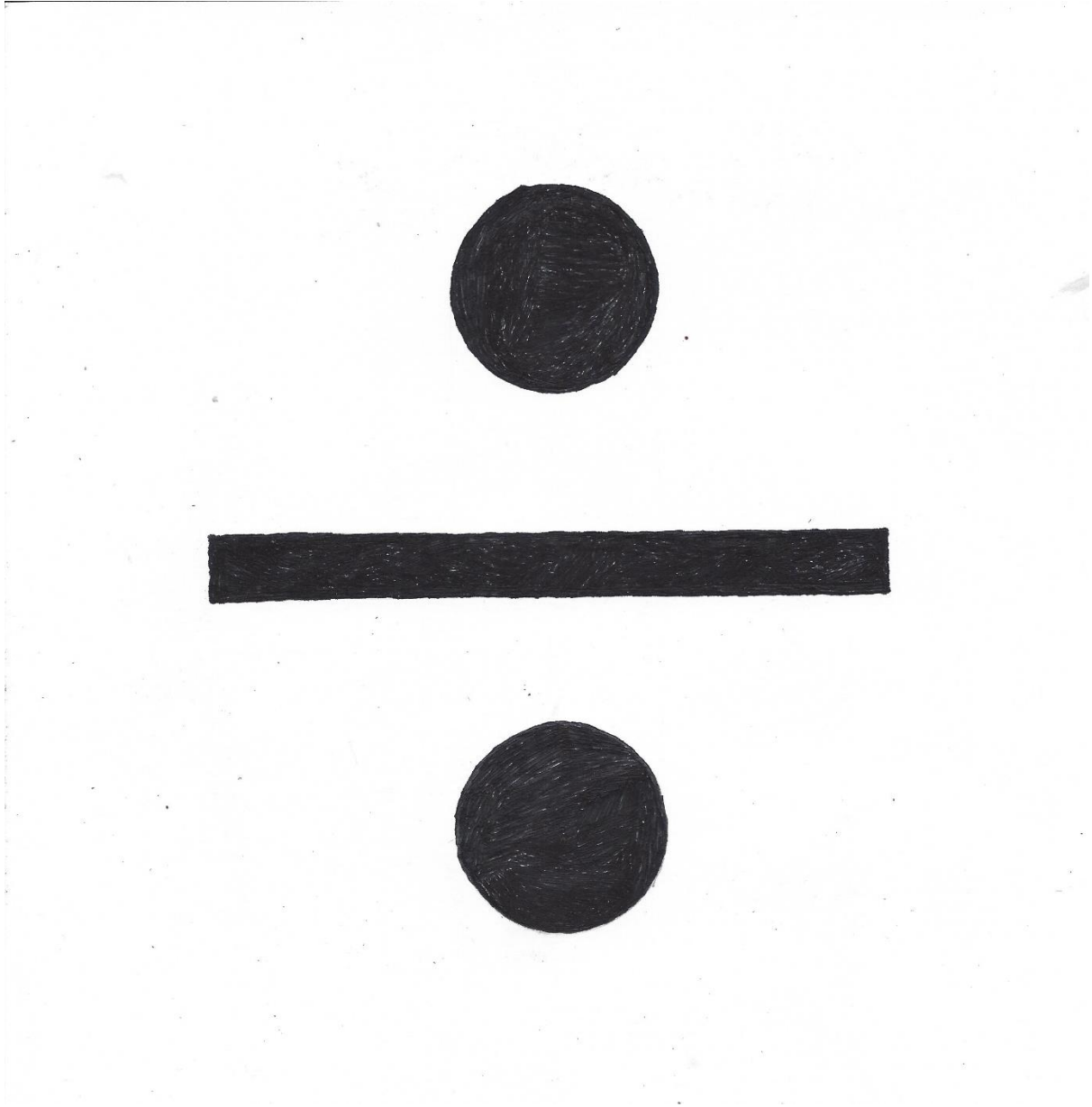# One Way of Conceptualising Division:

Figure 1: The Division Operator.

Introduction:

What follows is a discussion of Partitive Division.

Body:

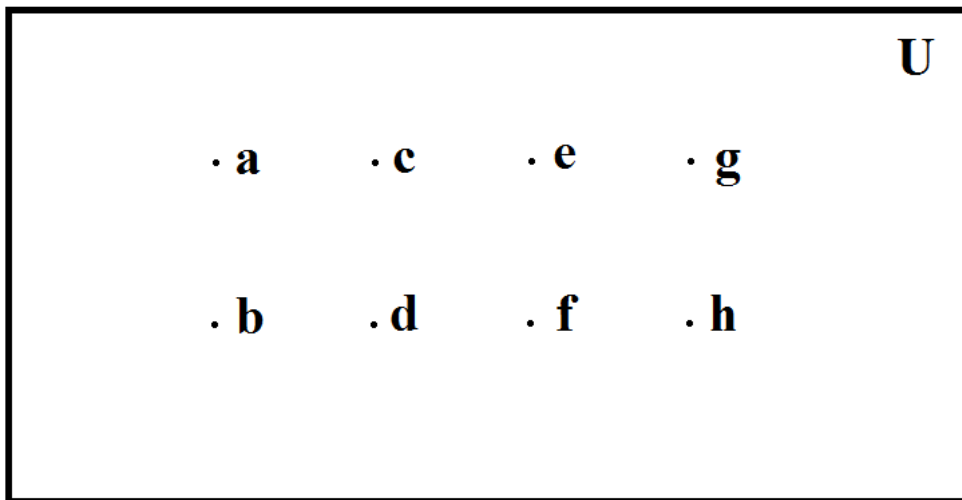We want an implicit understanding of the operation of Division.

Let us take the equation:

$$8 \div 4 = 2$$

and let us examine what is happening, conceptually, when this operation is being worked out. Let us imagine our dividend:

$$8$$

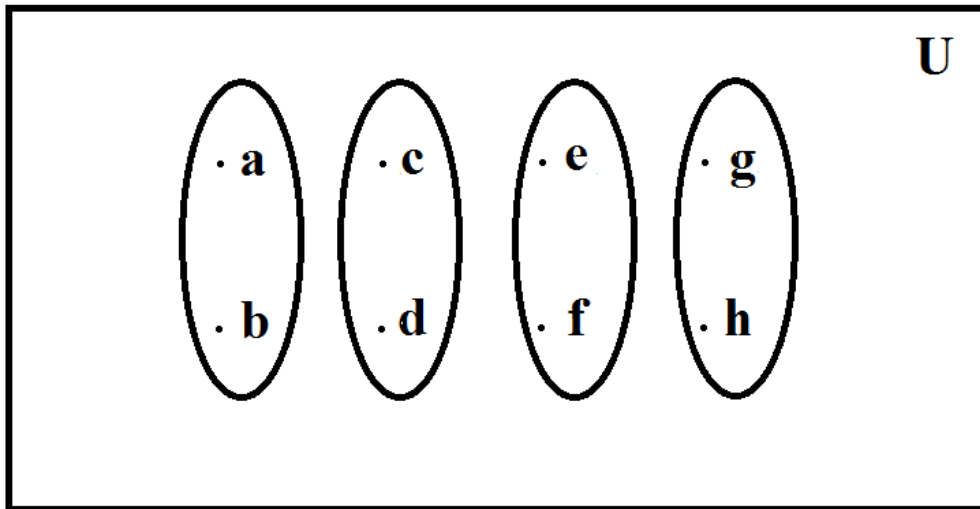as a Universal Set containing 8 elements:

Figure 2: A Universal Set containing the Dividend number of elements.
A Universal Set containing 8 elements. The set {a,b,c,d,e,f,g,h} .

Let us say that we wished to divide these elements, evenly, amongst a divisor number of sets. The divisor is:

$$4$$

in this instance. So we wish to distribute 8 elements, evenly, amongst 4 sets:

Figure 3: We have distributed a dividend number of elements, evenly, amongst a divisor number of sets. The number of elements in each set is the quotient. We have distributed 8 elements, evenly, amongst 4 sets. 2, the number of elements in each set, is the quotient.

If we distribute 8 elements, evenly, amongst 4 sets, then we obtain 2 elements in each set. 2 is the result of Division. If we were doing "sums" in primary school, then 2 would be "the answer."

We have taken 1 big set containing 8 elements:

$$\{a, b, c, d, e, f, g, h\}$$

and we have dispersed these elements evenly amongst 4 sets:

$$\{a, b\}\{c, d\}\{e, f\}\{g, h\}$$

The number of elements in each of these 4 sets, i.e.:

$$2$$

is the quotient.