

them learn the lines. William Hawley Smith makes Amy Kelly teach "Dodd" the table in that way, and says:

"The multiplication table, that had been the bane of his school life up to date, and which, under the stupid management of Amos Waughops, and the overwrought Grube method of Miss Stone, had floored him in every tussle he had had with it, now grew tractable and docile, a creature submissive to his will, and quick to do his bidding, unhesitatingly.

And what wonder, when Amy taught him this early work in numbers by use of his memory, rather than his reason: using a faculty that is strong at this period of life, rather than one which has hardly begun to sprout."

After the table is learned we use a set of charts made on heavy cardboard containing the 66 combinations of the table, thus:

	6	7	8	9	10	11	12
×	2	3	4	5	6	7	8

These charts we sometimes use for written work, for seat work, or for rapid oral work. Pointing to a combination the answer is given instantly, without naming the process.

This enables them to recognize combinations in different situations, but, at first the law of association will aid the memory to keep fast hold of what has been learned in "the lines."

In my early experience, some noted professor or superintendent stated that the table could be learned in three days, and gave his method. With infinite trouble and worry one class learned by this method and, at the end of the year, were sent out without having learned the lines.

It was the weakest class in multiplication of any in my experience, because if a product was forgotten, there was no fixed association of other numbers with it, to call it to mind again. *C. H. Parker in Primary Educator.*

Primary Reading.

Children cannot read until they are perfectly familiar with small words—can recognize them at sight. If it be attempted before this is accomplished, the reading is slow, laborious and dull.

Many of our poor readers in the upper grades are so from a slovenly habit that come from lack of proper drill. The bright boy or girl will soon learn to recognize words, but the slow ones must have the right kind of drill and plenty of it.

Every child who enters school has a vocabulary of from two hundred to three hundred words. The first few years of his school life the teacher merely teaches him the written and printed forms of words he already knows. —*Ex.*

QUESTION DEPARTMENT.

SUBSCRIBER. Would you kindly explain the working of the following question in the next issue of the REVIEW, Hamblin Smith's Arithmetic, page 292, question 339, viz: If in a meadow of 20 acres the grass grows at a uniform rate, and 133 oxen consumes the whole of the grass on it in 12 days, or that 28 oxen 5 acres of it in 16 days, how many oxen can eat up 4 acres of it in 14 days?

In the REVIEW for June, 1894, a question is worked similar to this. Refer to your file. If you are a new subscriber, we will send you that number on application. —*Ed.*

A. P. (1) How many sides has an equiangular polygon, four of whose angles are together equal to seven right angles?

By a simple exercise. All the interior angles + 4 right angles = twice as many right angles as the figure has sides. Let the figure have x sides. Then $\frac{7}{4} \times x$ right angles + 4 right angles = $2x$ right angles.

$$\frac{7x}{4} + 4 = 2x$$

$$x = 16 = \text{number of sides.}$$

If the figure is equilateral, as well as equiangular, the geometrical proof would be simpler.

(2) Nine gallons are drawn from a cask full of wine and it is then filled up with water; then 9 gallons of the mixture are drawn and cask is again filled up with water. If the quantity of wine now in the cask be to the quantity of water in it, as 16 is to 9, find how much the cask holds.

After water is put in the first time, $\frac{x-9}{x}$ part of the contents is wine. Of the 9 gals. drawn the second time, $\frac{x-9}{x}$ parts is wine. So the wine drawn the second time is = $\frac{9(x-9)}{x}$ gals.

Therefore the wine left in the cask = $x - 9 - \frac{9(x-9)}{x}$ gals., and the water the wine taken out = $9 + \frac{9(x-9)}{x}$

$$\text{Therefore } x - 9 - \frac{9(x-9)}{x} : 9 + \frac{9(x-9)}{x} :: 16 : 9$$

$$x^2 - 9x - 9x + 81 : 9x + 9x - 81 :: 16 : 9$$

$$x^2 - 18x + 81 : 18x - 81 :: 16 : 9$$

$$x^2 - 18x + 81 : 2x - 9 :: 16 : 1$$

$$x^2 - 18x + 81 = 32x - 144$$

$$x^2 - 40x = -225$$

$$x = 45 \text{ gallons.}$$