

Problems from

William Mott's and Mary Willson's Cyphering Books

Problem #1
(Addition)

$$\begin{array}{r} 1234 \\ 2345 \\ + 3456 \\ \hline \end{array}$$

Answer: _____

Problem #2
(Subtraction)

A man was born in the year 1702. I demand his age in the year 1781

Answer: _____

Problem #3
(Multiplication)

What cost 5 bushels wheat at \$1.75 per bushel?

Answer: _____

Problem #4
(Division)

There are 124 men who have \$372 among them. How much must each man have?

Answer: _____

Problem #5
(Reduction)

The US was still using the British money system when William and Mary wrote their cyphering books. The British system had three basic units:

1 pound (£) = 20 shillings (s)

1 shilling = 12 pence (d)

In 46 pounds (£46) how many shillings and pence?

Answer: £46 = _____shillings or _____pence

Problem #6
(Rule of Three)
(Algebra)

If a man on foot performs a journey in 3 days when the days are 16 hours long, how many days of 12 hours will require to go the same journey?

Answer: _____

Background

William Mott (1780-1855) and Mary Willson (1789-1871) grew up in northern New Jersey in the decades following the US War for Independence. Their families were Quakers and members of the Hardwick-Mendham (today Randolph) Monthly Meeting.

The cyphering books William and Mary kept were essentially workbooks. Once they learned their numbers, students used the books to work their way through a series of problems, starting with simple addition and then subtraction, multiplication, division, reduction and the “rule of three” or algebra.

William’s cyphering book is somewhat casually written suggesting he might have been self-taught. Mary’s cyphering book is neat and well organized, suggesting she may have been educated in a formal classroom setting. Mendham Meeting bought a lot for a schoolhouse in 1795 but the school building was not completed until 1802, the year before Mary started her book. Although Mary lived in Allamuchy, about 15 miles from where the school was located, she could have stayed with relatives in Mendham when the new school was in session.

William went on to become a successful businessman and community leader, starting with the purchase in 1810 of the Gristmill in what is known today as “Mott Hollow”. Mary moved to Randolph in 1814 when she married Richard Brotherton (1787-1865). William and Mary are buried in the Randolph Quaker Cemetery. William’s grave is marked; Mary’s, following Quaker practice, is not.

William’s and Mary’s cyphering books are archived in the Morristown Public Library. If you would like the challenge of solving other problems, check the Association’s website at: randolphmeetinghouse.org/events/cyphering.

Answers

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|-------------|---|
| Problem #1: | $1234 + 2345 + 3456 = 7035$ |
| Problem #2 | $1781 - 1702 = 79$ |
| Problem #3 | $\$1.75/\text{bushel} \times 5 \text{ bushels} = \8.75 total bill |
| Problem #4 | $\$372 / 124 \text{ men} = \3.00 per man |
| Problem #5 | $\pounds 46 \times 20\text{s}/\pounds 1 = 920\text{s} \times 12\text{d}/1\text{s} = 11,040\text{d}$ |
| Problem #6 | $\frac{3 \text{ days} \times 12 \text{ hrs.}}{16 \text{ hrs.}} = 4 \text{ days}$ |