

OPERATION.

1st cause	2d cause	1st effect	2d effect
4	6		
7	:	10	:: 84 : x
10		9	

$$4 \times 7 \times 10 \times x = 6 \times 10 \times 9 \times 84$$

$$x = \frac{6 \times 10 \times 9 \times 84}{4 \times 7 \times 10}$$

$$x = \$162.$$

EXPLANATION.—4 men in 7 da. of 10 hr. is the 1st cause; \$84 is the 1st effect. And 6 men in 10 da. of 9 hr. is the 2d cause; x is the 2d effect. And the product of all the terms in the extremes equals the product of all the terms in the means. Solving, $x = \$162$.

NOTE.—The first cause might be expressed as 280 hours of work ($4 \times 7 \times 10$); and the second cause, as 540 hours of work ($6 \times 10 \times 9$).

EXAMPLE II.—If 15 men can plow a farm in 8 days of 9 hours each, in how many days of 12 hours each can 2 men perform the same work?

OPERATION.

15	2
8	: x :: 1 : 1
9	12

$$2 \times 12 \times x = 15 \times 8 \times 9$$

$$x = \frac{15 \times 8 \times 9}{2 \times 12}$$

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

EXPLANATION.—When the same work is to be done, the effects are in the ratio of 1 to 1. The causes are: men working for so many days and so many hours a day. We replace by x the number of days in the 2d cause.

Written Problems.

1. If 35 men earn \$2 030 in 29 days, how many dollars can 43 men earn in 92 days?

2. A garrison of 1 200 men has provisions for 45 days. How long will these provisions last if the garrison is reinforced by 300 men?

Note.—The effects are in the ratio of 1 to 1, since in both cases the same quantity of provisions is involved.

3. In how many days can 6 men do the same work that 24 men can do in 8 days?