

Algebra Word Problems

Caton and Bradbury's Mathematical Series.

- 1) Three men, A, B, and C, trade in company and gain \$300, of which B is to have twice as much as A, and C three times as much as A. Required the share of each.

- 2) Divide 200 into three parts, in the proportion of 2, 3, and 5.

- 3) A man has 3 horses which are together worth \$480, and their values are as the numbers 1, 2, and 3; what are their respective values?

- 4) In a certain garrison of 2700 men there are five times as many infantry and three times as many artillery as cavalry. How many are there of each?

- 5) A gentleman began trade with a certain sum of money, and continued in trade 3 years. At the end of the first and second years he found he had double what he had at the beginning of those years; but during the third year he lost as much money as he began business with, when, winding up his affairs, he found he had \$1800. How much money did he begin with?

- 6) Two men are 180 miles apart and travel towards each other, one at the rate of 8 miles a day and the other at 10 miles a day. In how many days will they meet?

- 7) Four persons, A, B, C, and D, contributed towards a benevolent enterprise \$1800. B put in twice as much as A, C put in three times as much as B, and D put in as much as A, B, and C. How much did they each contribute?

Algebra Word Problems - Solutions

Caton and Bradbury's *Mathematical Series*.

- 1) Three men, A, B, and C, trade in company and gain \$300, of which B is to have twice as much as A, and C three times as much as A. Required the share of each.

Let	$x =$ no. \$ in A's share ;
then	$2x =$ " B's "
and	$3x =$ " C's "
Then	<hr/> $6x = 300;$

$x = 50$, \$ in A's share ; $2x = 100$, \$ in B's share ; $3x = 150$, \$ in C's share.

- 2) Divide 200 into three parts, in the proportion of 2, 3, and 5.

Let	$2x =$ one part ;
then	$3x =$ another part,
and	$5x =$ " "
Then	<hr/> $10x = 200,$

$$2x = 40, \quad 3x = 60, \quad 5x = 100.$$

- 3) A man has 3 horses which are together worth \$480, and their values are as the numbers 1, 2, and 3 ; what are their respective values ?

Let	$x =$ value in dollars of 1st horse ;
then	$2x =$ " " 2d "
and	$3x =$ " " 3d "
Then	<hr/> $6x = 480,$

$$x = 80, \$ \text{ for 1st, } \quad 2x = 160, \$ \text{ for 2d, } \quad 3x = 240, \$ \text{ for 3d.}$$

- 4) In a certain garrison of 2700 men there are five times as many infantry and three times as many artillery as cavalry. How many are there of each ?

Let	$x =$ number of cavalry ;
then	$3x =$ " artillery,
and	$5x =$ " infantry.
Then	<hr/> $9x = 2700,$
	$x = 300$, number of cavalry,
	$3x = 900$, " artillery,
	$5x = 1500$, " infantry.

Exercises from:

The Academic Algebra © 1890

By: William Bradbury

www.youtube.com/picrustable

www.picrust.com

kathryn@picrust.com

- 5) A gentleman began trade with a certain sum of money, and continued in trade 3 years. At the end of the first and second years he found he had double what he had at the beginning of those years; but during the third year he lost as much money as he began business with, when, winding up his affairs, he found he had \$1800. How much money did he begin with?

Let	$x =$	no. \$ he began with;
then	$2x =$	" had at end of 1st year,
and	$4x =$	" " " 2d "
and	$x =$	" lost the 3d year.
Then	$4x - x = 1800,$	$x = 600,$ no. \$ he began with.

- 6) Two men are 180 miles apart and travel towards each other, one at the rate of 8 miles a day and the other at 10 miles a day. In how many days will they meet?

Let	$x =$	number of days before they meet;
then	$8x =$	" " miles one travels,
	$10x =$	" " miles the other travels.
Then	$18x = 180,$	$x = 10,$ number of days.

- 7) Four persons, A, B, C, and D, contributed towards a benevolent enterprise \$1800. B put in twice as much as A, C put in three times as much as B, and D put in as much as A, B, and C. How much did they each contribute?

Let	$x =$	no. \$ A contributed;
then	$2x =$	" B "
and	$6x =$	" C "
and	$9x =$	" D "
Then	$18x = 1800,$	
	$x = 100,$ no. \$ A contributed;	$2x = 200,$ no. \$ B contributed;
	$6x = 600,$ " C "	$9x = 900,$ " D "