

Last season two running backs on the Steelers football team rushed for a combined total of 1550 yards. One rushed 4 times as many yards as the other. How many yards were rushed by each player?

Let a rep. yds rushed by RB1
" b " " " " " RB2

$$a + b = 1550$$
$$a = 4b$$

$$1550 = 4x + x$$

$$\frac{1550}{5} = \frac{5x}{5}$$

$$310 = x$$

$$RB2 = 310y$$

$$RB1 = 1240y$$

A particular Algebra text has a total of 1382 pages which is broken into two parts. The second part of the book has 64 more pages than the first part. How many pages are in each part of the book?

Let x rep. # of pages in part 1
 Let y " " " " " " " 2

$$x + y = 1382$$

$$y - x = 64 \rightarrow y = x + 64$$

$$x + (x + 64) = 1382$$

$$2x + 64 = 1382 - 64$$

$$\frac{2x}{2} = \frac{1318}{2}$$

$$x = 659$$

$$x + y = 1382$$

$$659 + y = 1382$$

$$y = 1382 - 659$$

$$y = 723$$

\therefore There are 659 pages in part 1
 and 723 pages in part 2.

On Monday Joe bought 10 cups of coffee and 5 doughnuts for his office at the cost of \$16.50. It turns out that the doughnuts were more popular than the coffee. On Tuesday he bought 5 cups of coffee and 10 doughnuts for a total of \$14.25. How much was each cup of coffee?

Let d rep. the cost of a donut.
 " c " " " " " " coffee.

$$(10c + 5d = 16.50) \times 2$$

$$5c + 10d = 14.25$$

$$\begin{array}{r} 20c + 10d = 33.00 \\ - 5c + 10d = 14.25 \\ \hline 15c \quad \emptyset d = 18.75 \\ \underline{15} \quad \quad \quad \underline{15} \end{array}$$

$$c = 1.25$$

\therefore a cup of coffee costs \$1.25

A chemistry teacher needs to make 10 L of 42% sulphuric acid solution. The acid solutions available are 30% sulphuric acid and 50% sulphuric acid, by volume. How many liters of each solution must be mixed to make the 42% solution?

Let x rep. the amount of 30% sol.
 " y " " " " " 50% sol.

$$x + y = 10 \rightarrow y = 10 - x$$

$$0.30x + 0.50y = 0.42(10)$$

$$0.3x - 0.5(10 - x) = 4.2$$

$$0.3x + 5 - 0.5x = 4.2 - 5$$

$$\frac{-0.2x}{-0.2} = \frac{-0.8}{-0.2}$$

$$x = 4$$

$$y = 10 - x$$

$$y = 10 - 4$$

$$y = 6$$

\therefore you need 4L of 30%
 and 6L of 50% solutions.

The perimeter of a rectangular garden is 62 feet. The length is 1 foot more than twice the width.
Find the dimension of the garden.

Let l rep. the length
 " w " " width.

$$-2w + l = 2w + 1$$

$$2w + 2l = 62 \rightarrow \begin{array}{r} -2w + l = 1 \\ + 2w + 2l = 62 \\ \hline \end{array}$$

$$0w + \frac{3l}{3} = \frac{63}{3}$$

$$l = 21$$

$$21 = 2w + 1$$

$$\frac{20}{2} = \frac{2w}{2}$$

$$10 = w$$

\therefore the length is 21 feet and
the width is 10 feet

Mandy has \$10,000 invested in two accounts. For the year she earned \$535 more interest from her 7% Mutual Fund account than she did from her 4% CD. How much does she have in each account?

Let m rep. the amount of money in M.F.
 " c " " " " " " " C.D.

$$(m + c = 10000) \cdot 0.04$$

$$0.07m - 0.04c = 535$$

$$\begin{array}{r} 0.04m + 0.04c = 400 \\ + 0.07m - 0.04c = 535 \\ \hline 0.11m \quad \quad c = 935 \\ \underline{0.11} \quad \quad \underline{0.11} \end{array}$$

$$m = 8500$$

$$8500 + c = 10000 \quad \xrightarrow{-8500}$$

$$c = 1500$$

\therefore she invested \$8500 in M.F.
and \$1500 in C.D.

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TEST FRIDAY

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