

Home
 Realtor
 Algebra ALEKS Topics
 Algebra Notes
 Algebra Reviews
 MAT0028
 MAC1105
 MGF ALEKS Topics
 MGF Reviews
 MGF Notes
 STA2023
 Stats ALEKS Topics
 Stats Notes
 Stats Reviews

Algebra / Solving a value mixture problem using a linear equation

Solving a value mixture problem using a linear equation

At the city museum, child admission is \$5.30 and adult admission is \$9.30. On Tuesday, four times as many adult tickets as child tickets were sold, for a total sales of \$892.50. How many child tickets were sold that day?

Number of child tickets:

x C 5.30
 $4x$ A 9.30

$$5.30x + 9.30(4x) = 892.50$$

$$5.30x + 37.20x = 892.50$$

$$42.50x = 892.50$$

$$\frac{42.50x}{42.50} = \frac{892.50}{42.50}$$

$$x = 21$$

Note: The Solve feature is not available to students.

Explanation Try Another Check

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Solving a value mixture problem using a linear equation

Chau's Coffee Shop makes a blend that is a mixture of two types of coffee. Type A coffee costs Chau \$4.90 per pound, and type B coffee costs \$5.95 per pound. This month's blend used three times as many pounds of type B coffee as type A, for a total cost of \$500.50. How many pounds of type A coffee were used?

Number of pounds of type A coffee:

A = 4.90
 B = 5.95

Type A Type B
 x $3x$

$$4.90x + 5.95(3x) = 500.50$$

$$4.90x + 17.85x = 500.50$$

$$22.75x = 500.50$$

$$\frac{22.75x}{22.75} = \frac{500.50}{22.75}$$

$$x = 22$$

A Web music store offers two versions of a popular song. The size of the standard version is 2.1 megabytes (MB). The size of the high-quality version is 4.7 MB. Yesterday, there were 1250 downloads of the song, for a total download size of 4679 MB. How many downloads of the high-quality version were there?

HQ downloads = x
 Standard downloads = $1250 - x$
 total downloads = 1250

Standard total size HQ total size total size

$$2.1(1250 - x) + 4.7x = 4679$$

$$2625 - 2.1x + 4.7x = 4679$$

$$2625 + 2.6x = 4679$$

$$-2625 \quad -2625$$

$$\frac{2.6x}{2.6} = \frac{2054}{2.6}$$

$$x = 790$$

#Lines
 #LinearEquationsAndInequalities

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