Word Problems - Day 3

Ex 1:

The PDCI Student's Council organized a dance. The ticket price for PDCI students was $5.50 and guests was $7.00. The total receipts were $2175.00. If 375 people attended, how many of them were guests.

Let x be # of students
" y " " " guests.

① $x + y = 375$

② $5.5x + 7y = 2175$

From ①
$x = 375 - y$
Sub into ②
$5.5(375 - y) + 7y = 2175$
$2062.5 - 5.5y + 7y = 2175$
$1.5y = 112.5$
$y = 75$

Sub $y = 75$ into ①
$x + 75 = 375$
$x = 300$

∴ 75 guests attended

Ex 2:

Kaitlyn is saving money for university, and has invested $2900. She has divided her investments into two accounts, one that pays 4% interest per annum, and another that pays 7% per annum. If she earned $125 of interest, how much did she invest in each?

Let a be the amount invested at 4%
" b " " " " 7%

① $a + b = 2900$

② $0.04a + 0.07b = 125$

① × 0.04 $0.04a + 0.04b = 116$
② $-\ 0.04a + 0.07b = 125$

$-0.03b = -9$
$\frac{-0.03b}{-0.03} = \frac{-9}{-0.03}$
$b = 300$

Sub $b = 300$ into ①
$a + 300 = 2900$
$a = 2600$

She invested
$2600 @ 4%
$300 @ 7%

Ex 3:

As a fundraiser, the PDCI Prom committee sold cookies and lollipops at lunch. The cookies sold for 1 dollar and the lollipops sold for 25 cents. In total, they sold 740 items - how many of each were sold if they raised $350?

Let c be # of cookies

" ℓ be # of lollipops

① $c + \ell = 740$

② $c + 0.25\ell = 350$

Subtract to eliminate

$0.75\ell = 390$

$\ell = 520$

→ Sub into ①

$c + 520 = 740$

$c = 220$

∴ They sold

220 cookies

520 lollipops

Practice

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