More Apps

① x # adult tickets

y # children tickets

$9x + 5y = 2250$

$x + y = 290$

$9x + 5(290 - x) = 2250$

$4x = 800$

$x = \cancel{100} \; 200$

$y = \cancel{090m} \; 90$

$\boxed{\begin{array}{l} \underset{200}{\cancel{100}} \text{ adult tickets} \\ \cancel{0}90 \text{ children tickets} \end{array}}$

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② $x =$ # dimes

$y =$ # quarters

$0.10x + 0.25y = 4.05$

$\cancel{x = 2x} \quad x = 2y$

$0.10(2y) + 0.25y = 4.05$

$0.45y = 4.05$

$y = 9$

$x = 18$

$\boxed{\begin{array}{l} 18 \text{ dimes} \\ 9 \text{ quarters} \end{array}}$

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③ $x =$ weekly charge

$y =$ charge per mile

$x + 520y = 250$

$2x + 800y = 440$

$2x + 800y = 446$

$-2x - 1040y = -500$

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$-240y = -60$

$y = 0.25$

$x = 120$

$\boxed{\begin{array}{l} \$120 \text{ weekly charge} \\ \$0.25 \text{ per mile} \end{array}}$

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④ 1st diget $= x$

2nd diget $= y$

$\cancel{x + y =} \; x + y = 9$

$10x + y - 9 = 10y + x$

$9x - 9y = 9 \rightarrow x - y = 1$

$x + y = 9$

$x - y = 1$

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$2x = 10$

$x = 5 \quad y = 4$

$\boxed{\begin{array}{l} \text{The \#} \\ \text{is } 54 \end{array}}$

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⑤ $x =$ amt in 15% stock

$y =$ amt in 6% bonk

$x + y = 8000$

$0.15x + 0.06y = 930$

$0.15x + 0.06(8000 - x) = 930$

$0.15x + 480 - 0.06x = 930$

$0.09x = 450$

$x = 5000$

$\boxed{\begin{array}{l} \$5000 \text{ in } 15\% \text{ stock} \\ \$3000 \text{ in } 6\% \end{array}}$

(6) $x = \#$ dimes

$y = \#$ nickels

$x + y = 75$

$0.10\, x + 0.05y = 5.95$

$0.10x + 0.05(75 - x) = 5.95$

$0.05x + 3.75 = 5.95$

$0.05x = 2.2$

$x = 44$

44 dimes
31 nickels

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(7) $x =$ diameter Earth

$y =$ diameter Mars

$x = 2y - 4182$

$\frac{1}{2}x + \frac{1}{2}y = 6059$

$x + y = 12118$

$2y - 4182 + y = 12118$

$3y = 12600$

$4200 = y$

Earth: 7918 mi
Mars: 4200 mi

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(8) $x =$ Joel's age now

$y =$ father's age now

$y + 5 = 3x$

$x - 5 + y = 50$

$3x - y = 5$

$\underline{x + y = 55}$

$4x = 60$

$x = 15$

Joel is 15 yrs old
his father is 40.

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(9) $x = 1^{st}$ digit

$y = 2^{nd}$ digit

$x + y = 14$

$10x + y + 36 = 10y + x$

$x + y = 14$

$9x - 9y = -36$

$x + y = 14$

$\underline{x - y = -4}$

$2x = 10$

$x = 5 \quad y = 9$

The number is 59

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(10) $x = \#$ balcony tickets

$y = \#$ main floor tickets

$y = x - 100$

$4x + 12y = 3056$

$4x + 12(x - 100) = 3056$

$4x + 12x - 1200 = 3056$

$16x = 4256$

$x = 266$

Balcony tickets cost $266

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(11) $x =$ per hr cost sprayer

$y =$ per hr cost generator

$6x + 6y = 90 \rightarrow x + y = 15$

$4x + 8y = 100$

$4x + 8y = 100$

$\underline{-4x - 4y = -60}$

$4y = 40$

$y = 10$

$x = 5$

Sprayer cost $5 per hr
generator $10 per hr

(12) $x =$ # t-shirts sold
      $y =$ # caps sold

$x = 3y$

$5x + 2.5y = 210$

$5(3y) + 2.5y = 210$

$15y + 2.5y = 210$

$17.5y = 210$

$y = 12$

$x = 36$

36 teshirts
12 caps sold