



On a jury, there are 3 fewer men than twice the number of women. If there were 2 more women on the jury, the numbers of men and women would be equal. How many men are on the jury?

$$\begin{array}{l} 2w - 3 = m \\ w + 2 = m \end{array}$$
$$\begin{array}{r} 2w - 3 = w + 2 \\ - w + 3 = -w + 3 \\ \hline w = 5 \end{array}$$

$5 + 2 = 7$

7 men

A collection of 77 quarters and dimes is worth \$12.50. How many quarters are there?

$$10(d + q) = (77)10$$

$$10d + 25q = 1250$$

$$10d + 10q = 770$$

$$-(10d + 25q = 1250)$$

$$\frac{-15q = -480}{-5}$$

$$\frac{-15q = -480}{-5}$$

$$q = 32$$

32 quarters

The sum of two numbers is 32. One number is 4 more than the other. Find the numbers.

$$x + y = 32$$

$$x = y + 4$$

$$y + 4 + y = 32$$

$$2y + 4 = 32$$

$$\begin{array}{r} 2y + 4 = 32 \\ -4 \quad -4 \\ \hline 2y = 28 \\ \hline y = 14 \end{array}$$

$$14 + 4 = 18$$

14 and 18

The length of a rectangle is 3 less than twice the width. The perimeter is 54. Find the dimensions.

$$\begin{aligned}l &= 2w - 3 \\ 2w + 2l &= 54 \\ 2w + 2(2w - 3) &= 54 \\ 2w + 4w - 6 &= 54 \\ 6w - 6 &= 54 \\ +6 &+6 \\ \hline 6w &= 60 \quad w = 10\end{aligned}$$

$$\begin{aligned}20 - 3 &= 17 \\ 10 \times 17\end{aligned}$$

The sum of two numbers is 66. If the smaller number is subtracted from two thirds of the larger number, the result is one third the positive difference of the original numbers. Find the numbers.

The side of a square house is 24 ft long, and the house is located on a lot which is 50 ft longer than it is wide. The perimeter of the lot is 20 ft more than 5 times the perimeter of the house. Find the length of the lot.

A grocer mixes two types of nuts, Brand A and Brand B. If the mix includes 4 kg of Brand A and 6 kg of Brand B, the mix will cost \$6.20 per kg. If it includes 2 kg of Brand A and 8 kg of Brand B, it will cost \$5.60 per kg. Find the cost per kg of each brand.

$$4a + 6b = 62 \quad \$8/\text{kg for A}$$

$$2(2a + 8b) = (56)2 \quad \$5/\text{kg for B}$$

$$\begin{array}{r} 4a + 6b = 62 \\ -(4a + 16b = 112) \\ \hline -10b = -50 \\ \underline{\quad} \\ \underline{-10} \\ \underline{\quad} \\ 6 = 5 \end{array}$$

$$\begin{array}{r} 4a + 16b = 112 \\ -(4a + 6b = 62) \\ \hline 10b = 50 \end{array}$$

$$\begin{array}{l}
 4c - 3d = 9 \\
 (4c - 2d = 10) \\
 \hline
 \frac{-d}{-1} = \frac{-1}{-1} \quad 3 \quad (2c - d = 5) \quad 3 \\
 \hline
 d = 1
 \end{array}$$

$$\begin{array}{l}
 4c - 3d = 9 \\
 - (4c - 3d = 15) \\
 \hline
 -2c = -6 \\
 \hline
 -2c = -6 \\
 \hline
 c = 3
 \end{array}$$

$$\begin{array}{l}
 6 - d = 5 \\
 \frac{-d}{-1} = \frac{-1}{-1} \\
 \hline
 d = 1
 \end{array}$$

$$\begin{array}{l}
 c = 3 \\
 d = 1
 \end{array}$$

$$3x - 2y = 5$$

$$x + 2y = 15$$

$$3x + 4y = -25$$

$$2x - 3y = 6$$

$$3x - y = 3$$

$$x + 3y = 11$$

$$2w - 3z = -1$$

$$3w + 4z = 24$$

$$5a - 2b = 0$$

$$2a - 3b = -11$$

$$x - 2y = 9$$

$$3x - y = 7$$

$$y = 2x - 1$$

$$2x - 4y = 10$$

$$8m + n = 3$$

$$3a - 4b = 17$$

$$4x - 5y = 0$$

$$8x + 5y = -60$$

$$10p + 4q = 2$$
$$10p - 8q = 26$$

$$-8r + s = -17$$

$$5r - 3s = -6$$

$$2x + 5y = 16$$

$$5x - 3y = -22$$

$$2x + y = 6$$

$$3x - 2y = 2$$

$$a + 3b = 9$$

$$2a + 3b = 15$$

$$3s - 5t = 27$$

$$s + 4t = -8$$

$$2x + y = 13$$

$$5x - 2y = 19$$

$$6m + 5n = 4$$

$$4m + 3n = 2$$

$$y = 5x - 1$$

$$2x + 3y = 14$$

$$3r + 2s = -4$$

$$4r - 2s = -10$$

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