

36

$$\left. \begin{aligned} 5x + 3y &= 69 \\ x + y &= 15 \end{aligned} \right\} x = 15 - y$$

$$\begin{aligned} 5(15 - y) + 3y &= 69 \\ 75 - 5y + 3y &= 69 \\ -2y &= -6 \end{aligned}$$

$y = 3$ per piutera blanca
 $x = 12$ per piutera verda

37

$$\left. \begin{aligned} x + y &= 5 \\ 0,8x + 0,9y &= 5 \cdot 0,86 \end{aligned} \right\} x = 5 - y$$

$$\begin{aligned} 0,8(5 - y) + 0,9y &= 4,3 \\ 4 - 0,8y + 0,9y &= 4,3 \\ 0,1y &= 0,3 \end{aligned}$$

$y = 2$ quilos
 $x = 3$ quilos

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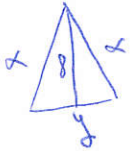
$$\left. \begin{aligned} 2x + y &= 32 \\ x^2 + \left(\frac{y}{2}\right)^2 &= x^2 \end{aligned} \right\} y = 32 - 2x$$

$$64 + \frac{(32 - 2x)^2}{4} = x^2$$

$$256 + 1024 + 4x^2 - 128x = 4x^2$$

$$1280 = 128x$$

$x = 10$ costats iguals
 $y = 12$ costat diferent



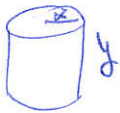
42

$$\left. \begin{aligned} 2\pi x^2 + 2\pi xy &= 12\pi \\ x + y &= 14 \end{aligned} \right\}$$

$$\begin{aligned} x^2 + xy &= 56 \\ y &= 14 - x \end{aligned}$$

$$\begin{aligned} x^2 + (14 - x)x &= 56 \\ x^2 + 14x - x^2 &= 56 \end{aligned}$$

$x = \frac{56}{14} = 4$ cm de radi
 $y = 10$ cm d'altura



43

$$\left. \begin{aligned} x + y &= 50 \\ 5,4x + 6,4y &= 5,88 \cdot 50 \end{aligned} \right\} x = 50 - y$$

$$\begin{aligned} 5,4(50 - y) + 6,4y &= 294 \\ 270 - 5,4y + 6,4y &= 294 \end{aligned}$$

$y = 24$ almen a 4€ B
 $x = 26$ almen a 4€ C

44

$$\left. \begin{aligned} 2x - 3 + y &= 36 \\ y^2 &= x^2 + (x - 3)^2 \end{aligned} \right\} y = 39 - 2x$$

$$\begin{aligned} (39 - 2x)^2 &= x^2 + x^2 + 9 - 6x \\ 1521 - 156x + 4x^2 &= 2x^2 + 9 - 6x \\ 2x^2 - 150x + 1512 &= 0 \\ x^2 - 75x + 756 &= 0 \end{aligned}$$

~~$x = 63$ $y = -87$~~
 $x = 12$ $y = 15$



$$x = \frac{75 \pm \sqrt{5625 - 3024}}{2} \rightarrow \frac{75 + 51}{2} = 63$$

$$\rightarrow \frac{75 - 51}{2} = 12$$

46

$$\left. \begin{aligned} 1,05x + 1,05y &= 210 \\ 1,10x + 0,9y &= 210 \end{aligned} \right\}$$

$$\begin{aligned} -1,155x - 1,155y &= -231 \\ 1,155x + 0,945y &= 220,5 \\ \hline -0,21y &= -10,5 \end{aligned}$$

$y = 50$ € zu vellotje
 $x = 150$ € fr vellotje

47

$$\left. \begin{aligned} xy &= 90 \\ (x + 3)(y - 5) &= 90 \end{aligned} \right\} x = \frac{90}{y}$$

$$\begin{aligned} x - 5x + 3y - 15 &= 90 \\ -5 \cdot \frac{90}{y} + 3y - 15 &= 0 \end{aligned}$$

$$\begin{aligned} -450 + 3y^2 - 15y &= 0 \\ y^2 - 5y - 150 &= 0 \end{aligned}$$

$y = \frac{5 \pm \sqrt{25 + 600}}{2} \rightarrow \frac{5 + 25}{2} = 15$ € $x = \frac{90}{15} = 6$ llibres
 $\frac{5 - 25}{2} = -10$

49

$$\begin{cases}
 xy = 9 \\
 2 + (x-2)(y+0,25) = 9
 \end{cases}
 \quad
 \begin{cases}
 x = \frac{9}{y} \\
 x = \frac{9}{1,5} = \boxed{6 \text{ answer}}
 \end{cases}$$

$$\begin{aligned}
 2 + xy + 0,25x - 2y - 0,5 &= 9 \\
 0,25\left(\frac{9}{y}\right) - 2y + 1,5 &= 0 \\
 2,25 - 2y^2 + 1,5y &= 0 \quad -2y^2 + 1,5y + 2,25 = 0
 \end{aligned}$$

51

$$\begin{cases}
 \frac{xy}{2} = 24 \\
 \left(\frac{x}{2}\right)^2 + \left(\frac{y}{2}\right)^2 = 25
 \end{cases}
 \quad
 \begin{cases}
 xy = 48 \\
 \frac{x^2}{4} + \frac{y^2}{4} = 25
 \end{cases}
 \quad
 \begin{cases}
 x = \frac{48}{y} \\
 x^2 + y^2 = 100 \\
 \left(\frac{48}{y}\right)^2 + y^2 = 100 \rightarrow 2304 + y^4 = 100y^2 \\
 y^4 - 100y^2 + 2304 = 0 \\
 t^2 - 100t + 2304 = 0
 \end{cases}$$

$$t = \frac{100 \pm \sqrt{100^2 - 4 \cdot 1 \cdot 2304}}{2} \rightarrow \begin{cases} \frac{100+28}{2} = 64 \\ \frac{100-28}{2} = 36 \end{cases}$$

negatives no

$$\begin{cases}
 t=64 & y = \sqrt{64} & \begin{cases} y=8 \\ y=8 \end{cases} \\
 t=36 & y = \sqrt{36} & \begin{cases} y=6 \\ y=6 \end{cases}
 \end{cases}
 \rightarrow
 \begin{cases}
 x=6 \\
 x=8
 \end{cases}$$

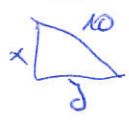
52

$$\begin{cases}
 x+y = 8 \\
 10x+y+18 = 10y+x
 \end{cases}
 \quad
 \begin{cases}
 x = 8-y \\
 10(8-y) + y + 18 = 10y + 8 - y \\
 80 - 10y + y + 18 = 10y + 8 - y \\
 90 = 18y \quad y = 5 \\
 x = 3
 \end{cases}
 \quad
 \text{es d } \boxed{35}$$

53

$$\begin{cases}
 x+40 = y-80 \\
 400 + (x+20)(y-60) = xy
 \end{cases}
 \quad
 \begin{cases}
 x = y - 120 \\
 400 + xy + 20y - 60x - 1200 = xy \\
 400 + 20y - 60(y-120) - 1200 = 0 \\
 400 + 20y - 60y + 7200 - 1200 = 0 \\
 -40y = -6400 \\
 \boxed{y = 160} \\
 \boxed{x = 40}
 \end{cases}$$

54



$$\begin{cases}
 \frac{xy}{2} = 24 \\
 x^2 + y^2 = 10^2
 \end{cases}
 \quad
 \begin{cases}
 xy = 48 \\
 x^2 + y^2 = 100
 \end{cases}
 \quad
 \begin{cases}
 x = \frac{48}{y} \\
 \frac{48^2}{y^2} + y^2 = 100 \\
 2304 + y^4 = 100y^2 \\
 y^4 - 100y^2 + 2304 = 0
 \end{cases}$$

continua com o 51.

55

$$\begin{cases}
 \frac{10x+y}{10y+x} = 1,2 \\
 x-y = 1
 \end{cases}
 \quad
 \begin{cases}
 10x+y = 1,2(10y+x) \\
 10x+y = 12y + 1,2x \\
 x = 1+y \\
 10(1+y) + y = 12y + 1,2(1+y) \\
 10 + 10y + y = 12y + 1,2 + 1,2y \\
 8,8 = 2,2y \\
 \boxed{y = 4} \\
 \boxed{x = 5}
 \end{cases}
 \quad
 \text{es d } \boxed{54}$$

56

$$\begin{cases}
 136x = x^2 + xy \\
 j^2 = 15^2 + x^2
 \end{cases}
 \quad
 \begin{cases}
 y = \frac{136}{x} \\
 \frac{136^2}{x^2} = 225 + x^2 \\
 18496 = 225x^2 + x^4 \\
 t^2 + 225t - 18496 = 0
 \end{cases}
 \quad
 \begin{cases}
 x^4 = t^2 \\
 x^2 = t
 \end{cases}$$

$$t = \frac{225 \pm \sqrt{50625 + 73984}}{2} \rightarrow t = \frac{225 + 353}{2} = 289 \rightarrow \boxed{x = \sqrt{289} = \pm 17} \rightarrow y = 8$$

negatives no