

① a)  $\frac{2x+1}{2x-1} - \frac{2x-1}{2x+1} - \frac{8}{4x^2-1} = 0$   
 $x \neq \frac{1}{2}$   
 $x \neq -\frac{1}{2}$

$\frac{(2x+1)^2 - (2x-1)^2 - 8}{(2x-1)(2x+1)} = 0$   
 $4x^2 + 4x + 1 - 4x^2 + 4x - 1 - 8 = 0$   
 $8x - 8 = 0 \quad 8x = 8 \quad \boxed{x=1}$

b)  $\frac{5x-7}{2} - \frac{2x+7}{3} = 3x-14$

$\frac{15x-21-4x-14}{6} = 3x-14$

$11x-35 = 18x-84$

$84-35 = 18x-11x$

$49 = 7x \quad \boxed{x=7}$

c)  $4(2-3x) = -(6x-8+6x)$

$8-12x = -(12x-8)$

$8-12x = -12x+8$

$0 = 0$

SOLUCION  $\boxed{x \in \mathbb{R}}$

d)  $x^2 - 4x + 7 = 0$

$a=1 \quad b=-4 \quad c=7$

$b^2 - 4ac = 16 - 4(7)(1)$

$b^2 - 4ac = 16 - 28$

$b^2 - 4ac = -12$

NO TIENE SOLUCIONES REALES.

e)  $3(x^2 - \frac{10}{3}x - \frac{8}{3}) = 0$

$x^2 - 2(x)(\frac{5}{3}) + (\frac{5}{3})^2 - (\frac{5}{3})^2 - \frac{8}{3} = 0$

$(x - \frac{5}{3})^2 = \frac{25}{9} + \frac{8}{3} \rightarrow (x - \frac{5}{3})^2 = \frac{49}{3}$

$|x - \frac{5}{3}| = \frac{7}{3} \quad x_1 = \frac{5}{3} - \frac{7}{3} \rightarrow \boxed{x_1 = -\frac{2}{3}}$

$x_2 = \frac{5}{3} + \frac{7}{3}$

$\boxed{x_2 = 4}$

① f)  $\sqrt{2x+1} - \sqrt{x-3} = 2$   
 $x \geq 3$   
 $x \geq -\frac{1}{2}$   
 $x \geq 0$

$$\sqrt{2x+1} = \sqrt{x-3} + 2$$

$$2x+1 = x-3 + 4\sqrt{x-3} + 4$$

$$x = 4\sqrt{x-3}$$

$$x^2 = 16(x-3)$$

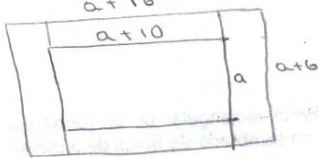
$$x^2 - 16x + 48 = 0$$

$$(x-12)(x-4) = 0$$

$$x = 12 \quad x = 4$$

② a)  $4x^2 + 12x + 9 = (2x+3)^2$   
 b)  $64x^2 - 16y^4 = 16(4x^2 - y^4) = 16(2x+y^2)(2x-y^2)$   
 c)  $12x^2z + 8y^2z - 15x^2w - 10y^2w = 4z(3x^2 + 2y^2) - 5w(3x^2 + 2y^2) = (3x^2 + 2y^2)(4z - 5w)$

③



Las dimensiones son 4 x 14 pies

$$3(a+6) + 3(a+6) + 3(a+10) + 3(a+10) = 144$$

$$6(a+6) + 6(a+10) = 144$$


$$6a + 36 + 6a + 60 = 144$$

$$12a + 96 = 144$$

$$12a = 48$$

$$a = 4$$

④



El lado mide 8 unidades de largo

$$A = x^2 \quad A = 8P$$

$$P = 4x$$

$$x^2 = 8(4x)$$

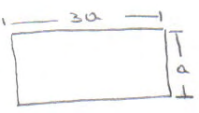
$$x^2 - 32x = 0$$

$$x(x-32) = 0$$

$$x = 0$$

$$x = 32$$

⑤



Las dimensiones son 13,6 x 40,8 cm

$$P = 3a + 68$$

$$P = 2a + 6a$$

$$P = 8a$$

$$8a = 3a + 68$$

$$5a = 68$$

$$a = 13,6 \text{ cm}$$

largo = 40,8 cm

⑥

dec  $\rightarrow x+4$   
 uni  $\rightarrow y-4$

$$x+y = 14$$

$$10(x+4) + y-4 = 10y+x$$

$$10x+40+y-4-10y-x=0$$

$$9x-9y+36=0$$

$$x-y+4=0$$

$$x = 14 - y$$

$$x = y - 4$$

$$y - 4 = 14 - y$$

$$2y = 18$$

$$y = 9$$

$$x = 5$$

El # es 95