

3.35)

$$3r^2 + r = 27 + 3r - 2r$$

$$3r^2 = 27$$

$$r^2 = 9$$

$$r = (-3, 3)$$

-3 y 3 son soluciones

Comprobación

Para  $r = -3$

$$27 - 3 = 27 - 9 + 6$$

$$-3 = -3$$

Para  $r = 3$

$$27 + 3 = 27 + 9 - 6$$

$$3 = 3$$

3.36)

$$\sqrt[4]{y} + \sqrt[4]{16y} - 2 = 4$$

$$\sqrt[4]{y} = x$$

$$x + 2x - 2 = 4$$

$$3x = 6$$

$$x = 2$$

$$\sqrt[4]{y} = 2$$

$$y = \underline{16}$$

3.37)

$$\frac{3}{2+\sqrt{y}} + \frac{4}{2+\sqrt{y}} = 1$$

$$7 = 2 + \sqrt{y}$$

$$5 = \sqrt{y}$$

$$\underline{25} = y$$

3.38) X: Amount of each coin.

25 x + 10 x + 5 x es múltiplo de 100

$$x = 2$$

$$50 + 20 + 10 = 80$$

$$x = 3$$

$$75 + 30 + 15 \text{ No}$$

$$x = 5$$

$$125 + 50 + 25 = 200$$

2 USD

$$x = 4$$

$$100 + 40 + 20 \quad 110$$

3.39)

(a)

$$(x-1) + x + (x+1) = 3x$$

(b)

$$(x-11) + (x-10) + \dots + x + (x+1) + (x+2) \dots (x+11) = 23x$$

$$23x = 2323$$

$$x = 101$$

$$x+11 = \boxed{112}$$

3.40)

$$\frac{3}{1 - \frac{2}{x}} = 3z$$

$$3 = 3z \left(1 - \frac{2}{x}\right)$$

$$3 = 3z - 6$$

$$9 = 3z$$

$$\boxed{3} = z$$

3.41)

$$2x+7 - x = 4x+26 - 3x - 36$$

$$x+7 = x - 6$$

$$7 = -6$$

$$-b = 4$$

$$b = \boxed{-4}$$

3.42)

$$\frac{3}{t-2} + \frac{9}{2-t} = 12$$

$$\frac{3}{t-2} - \frac{9}{t-2} = 12$$

$$-6 = 12(t-2)$$

$$-6 + 24 = 12t$$

$$18 = 12t$$

Comprobación

$$\frac{3}{-\frac{1}{2}} + \frac{9}{\frac{9}{2} - \frac{3}{2}} = 12$$

$$-6 + 18 = 12$$

$$12 = 12$$

$$\frac{16}{x_6} = t$$

$$\boxed{\frac{3}{2}} = t$$

3.43)

$$\frac{\sqrt{3 + \sqrt[3]{t}}}{\sqrt{3 - \sqrt[3]{t}}} = 3 \quad \frac{\sqrt{\frac{16}{5} + \frac{12}{5}}}{\sqrt{\frac{16}{5} - \frac{12}{5}}} = \frac{\sqrt{\frac{28}{5}}}{\sqrt{\frac{4}{5}}} = \frac{\sqrt{28}}{\sqrt{3}} = 3$$

$$\sqrt{9} = 3$$

$$3 = 3$$

$$\sqrt{3 + \sqrt[3]{t}} = 3 \sqrt{3 - \sqrt[3]{t}}$$

$$3 + \sqrt[3]{t} = 9(3 - \sqrt[3]{t})$$

$$3 + \sqrt[3]{t} = 27 - 9\sqrt[3]{t}$$

$$10\sqrt[3]{t} = 24$$

$$\sqrt[3]{t} = \frac{12}{5}$$

$$t = \boxed{\frac{1728}{125}}$$

3.44)

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

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

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

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

$$4(x-1) = x+1$$

$$4x-4 = x+1$$

$$3x = 5$$

$$x = \boxed{\frac{5}{3}}$$

comprobación:

$$2\sqrt{\frac{5}{3} - \frac{2}{3}} = \sqrt{\frac{5}{3} + \frac{2}{3}}$$

$$2\sqrt{\frac{3}{3}} = \sqrt{\frac{7}{3}}$$

$$\sqrt{\frac{8}{3}} = \sqrt{\frac{8}{3}}$$

