

P. 232

1, 5, 9, 13, 17, 23, 25

$$1) \frac{x-2^{(3)}}{3} + \frac{x+5^{(3)}}{3} = \frac{1}{3}^{(3)} \quad 5) \frac{x^{(x-3)} + \frac{4x^{(x-3)}}{x-3} = \frac{12}{x-3}^{(x-3)}$$

$$x-2 + x+5 = 1$$

$$2x+3 = 1$$

$$2x = -2$$

$$\boxed{x = -1}$$

$$x(x-3) + 4x = 12$$

$$x^2 - 3x + 4x = 12$$

$$x^2 + x - 12 = 0$$

$$(x+4)(x-3) = 0$$

$$\boxed{x = -4} \quad x = 3$$

$$9) \frac{x^{(x)} + \frac{12}{x}^{(x)} = 7^{(x)} \quad 13) \frac{3x^{(x-2)(x+5)}}{x+5} + \frac{1}{x+2}^{(x-2)(x+5)} = \frac{7}{(x-2)(x+5)}^{(x-2)(x+5)}$$

$$x^2 + 12 = 7x$$

$$x^2 - 7x + 12 = 0$$

$$(x-4)(x-3) = 0$$

$$x = 4 \quad x = 3$$

$$3x(x-2) + 1(x+5) = 7$$

$$3x^2 - 6x + x + 5 = 7$$

$$3x^2 - 5x - 2 = 0$$

$$3x^2 - 6x + 1x - 2 = 0$$

$$3x(x-2) + 1(x-2) = 0$$

$$(3x+1)(x-2) = 0$$

$$\boxed{x = -\frac{1}{3}} \quad x = 2$$

$$\begin{array}{r} -6 \\ -5 \\ \hline 1 \end{array}$$

$$17) \frac{3^{x(x+2)}}{x+2} + \frac{6^{x(x+2)}}{x(x+2)} = \frac{3-x}{x}^{(x)(x+2)}$$

$$3x + 6 = (3-x)(x+2)$$

$$3x + 6 = 3x + 6 - x^2 - 2x$$

$$3x + 6 = -x^2 + x + 6$$

$$x^2 + 2x = 0$$

$$x(x+2) = 0$$

$$x = 0 \quad x = 2$$

no solution

$$23) \frac{2}{x-1} + x = 5$$

$$2 + x(x-1) = 5(x-1)$$

$$2 + x^2 - x = 5x - 5$$

$$x^2 - 6x + 7 = 0$$

$$(x-7)(x+1) = 0$$

$$\boxed{x=7 \quad x=-1}$$

$$25) \frac{x^2 - 2x + 1}{x+5} = 0$$

$$x^2 - 2x + 1 = 0$$

$$(x-1)(x-1) = 0$$

$$x=1 \quad x=1$$

$$\boxed{x=1}$$