

$$1) \frac{-7}{x+6} = \frac{4}{5x-2} + \frac{11x+3}{12-5x^2-28x}$$

$$\frac{-7}{x+6} - \frac{4}{5x-2} = \frac{11x+3}{-5x^2-28x+12} = 0$$

$$\frac{-7}{x+6} - \frac{4}{5x-2} + \frac{11x+3}{5x^2+28x-12} = 0$$

$$\frac{-7(5x-2) - 4(x+6) + 11x+3}{\cancel{(x+6)(5x-2)}} = 0$$

$$\text{D.E. : } x \neq -6, x \neq \frac{2}{5}$$

$$-35x + 14 - 4x - 24 + 11x + 3 = 0$$

$$-28x = 7 \quad | \quad x = \frac{7}{-28} = -\frac{1}{4}$$

ACC.

$$2) f(x) = \frac{x^2 - x}{1 - 3x^2}$$

$$b) [f(3^{-1})]^{-2} = \frac{f(1)}{5}$$

$$f\left(\frac{1}{3}\right) = \frac{\frac{1}{9} - \frac{1}{3}}{1 - 3\left(\frac{1}{9}\right)} = \frac{\frac{1-3}{9}}{\frac{3-1}{3}} =$$

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

$$f(1) = 0$$

$$\left(-\frac{1}{3}\right)^{-2} = 9$$

$$3) \left(\frac{5}{2x^2 - 2x - 12} - \frac{3}{2x^2 + 2x - 4} \right) : \frac{1}{x-3} + \frac{x^3 - 3x^2 + 3x - 2}{x-1} + x$$

$$= \left(\frac{5}{2(x-3)(x+2)} - \frac{3}{2(x-1)(x+2)} \right) : \frac{1}{x-3} + \frac{x^3 - 3x^2 + 3x - 2}{x-1} + x$$

$$= \frac{5x - 5 - 3x + 9}{2(x-3)(x+2)(x-1)} \cdot \cancel{(x-3)} + \frac{x^3 - 3x^2 + 3x - 2}{x-1} + x$$

$$= \frac{\cancel{2(x+2)}}{\cancel{2(x+2)}(x-1)} + \frac{x^3 - 2x^2 + 2x - 2}{x-1} =$$

$$= \frac{1 + x^3 - 2x^2 + 2x - 2}{x-1} = \frac{x^3 - 2x^2 + 2x - 1}{x-1} =$$

$$= \frac{\cancel{(x-1)}(x^2 - x + 1)}{\cancel{x-1}} = R(1) = 1 - 2 + 2 - 1 = 0$$

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

1	-2	2	-1
1	1	-1	1
1	-1	1	//

$$4) \frac{3x}{x^2-4} - \frac{x+1}{3x} + \frac{x-3}{2-x} = \frac{x+5}{3x+6} - \frac{5x^3-8x^2+4}{3x^3-12x}$$

$$\frac{3x}{(x-2)(x+2)} - \frac{x+1}{3x} - \frac{x-3}{x-2} - \frac{x+5}{3(x+2)} + \frac{5x^3-8x^2+4}{3x(x-2)(x+2)} = 0$$

$$\frac{9x^2 - (x+1)(x^2-4) - (x-3)(3x^2+6x) - (x+5)(x^2-2x) + 5x^3 - 8x^2 + 4}{3x(x+2)(x-2)} = 0$$

C.E. $x \neq 0, x \neq -2, x \neq 2$

$$9x^2 - x + 4x - x^2 + 4 - 3x^3 - 6x + 9x^2 + 18x - x^3 + 2x^2 - 5x^2 + 10x + 5x^3 - 8x^2 + 4 = 0$$

$$32x = -8 \quad ; \quad x = \frac{-8}{32} = -\frac{1}{4}$$

AEC.