(6) $4x + \frac{-(x+9)}{2x}$

rewrite $\frac{(2x)4x}{(2x)1} + \frac{-x-9}{2x}$ LCD $2x$

$\frac{(4x)(2x)-x-9}{2x}$

$\frac{8x^2-1x-9}{2x}$

(7) $\frac{(x+5)}{1} + \frac{7}{(x+3)}$

LCD $(x+3)$

$\frac{(x+3)}{(x+3)}\left(\frac{x+5}{1}\right) + \frac{7}{(x+3)}$ FOIL

$\frac{x^2+5x+3x+15+7}{x+3}$

$\frac{(x^2+8x+22)}{(x+3)}$

10) $\dfrac{\dfrac{(x+9)}{(x+9)}\dfrac{x}{1} - \dfrac{10}{x+9}}{\dfrac{(x+4)}{(x+4)}\dfrac{x}{1} - \dfrac{5}{x+4}} \Rightarrow \dfrac{\dfrac{(x^2+9x-10)}{(x+9)}}{\dfrac{(x^2+4x-5)}{(x+4)}}$

$$\frac{x^2+9x-10}{(x+9)} \div \frac{x^2+4x-5}{(x+4)}$$

$$\frac{(x+10)(x-1)}{(x+9)} \cdot \frac{(x+4)}{(x-1)(x+5)}$$

$$\frac{(x+10)(x+4)}{(x+9)(x+5)}$$

9

$$\frac{\frac{x^2+5x+6}{x^2-9}}{\frac{x+2}{1}} \Rightarrow \frac{\frac{(x+3)(x+2)}{(x-3)(x+3)}}{\frac{(x+2)}{1}}$$

$$\frac{(x+3)(x+2)}{(x+3)(x-3)} \div \frac{(x+2)}{1}$$

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

$$\frac{1}{x-3}$$

(3) FOIL Dist.

$$\frac{(x+4)(x-4)}{(x+4)(x)} + \frac{(x)(-x+11)}{(x)(x+4)} = \frac{(1)(x+4)}{(x)(x+4)}$$

$$x^2 - 16 - x^2 + 11x = x + 4$$

$$-16 + 11x = x + 4$$

$$-x \quad -x$$

$$-16 + 10x = 4$$

$$16 \quad 16$$

$$10x = 20$$

$$x = 2$$

5

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

dist N dist LCD $6x-4$

$$2x+10+5x-8 = 27x-18$$

$$7x+2 = 27x-18$$

$+18 \quad +18$

$$7x+20 = 27x$$

$-7x \quad -7x$

$$\frac{20}{20} = \frac{20x}{20}$$

$$1 = x$$

(1) LCD $\frac{(1)}{3x^2} = \frac{(x+3)}{2x^2} + \frac{(-1)}{6x^2}$ LCD LCD LCD $6x^2$

$\frac{(6x^2)(1)}{(3x^2)} = \frac{(6x^2)(x+3)}{(2x^2)} + \frac{(6x^2)(-1)}{(6x^2)}$ dist

$2 = 3x + 9 - 1$

$2 = 3x + 8$

$-8 \quad -8$

$\frac{-6}{3} = \frac{3x}{3}$

$-2 = x$

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

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

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

$3x = 5x-14$

$-5x \quad -5x$

$-2x = -14$

$\frac{-2x}{-2} = \frac{-14}{-2}$

$x = 7$

② LCD $\frac{7x}{9} + \frac{1}{3} = \frac{5x}{6}$ LCD LCD

LCD 18

$\rightarrow$

$\frac{2}{\cancel{18}}\cdot\frac{7x}{\cancel{9}} + \frac{6}{\cancel{18}}\cdot\frac{1}{\cancel{3}} = \frac{3}{\cancel{18}}\cdot\frac{5x}{\cancel{6}}$

$14x + 6 = 15x$

$-14x \quad -14x$

$6 = x$

8

$$\frac{x^5}{10y^2} \div \frac{x^3}{5y}$$

$$\frac{x^{\cancel{3}\,2}}{2\cancel{10}y^{\cancel{2}}} \cdot \frac{\cancel{5y}}{\cancel{x^3}}$$

$$\frac{x^2}{2y}$$