The method: The least common denominator

Factor each denominator. The LCD uses the LCM of the numbers and every factor at its highest power. Leave it factored.

$\frac{2}{(x+7)(x+6)}, \quad \frac{1}{(x+7)(x-5)}$ $\quad \text{LCD} = (x+7)(x+6)(x-5)$

$\text{LCD} = (x+7)(x+6)(x-5)$ each factor once, at its highest power

$\frac{1}{10x^2}, \quad \frac{5}{8x^3}$ $\quad \text{LCD} = 40x^3$

$\text{LCD} = 40x^3$ the LCM of the numbers, and the highest power of x

$\frac{1}{6x(x-1)}, \quad \frac{5}{4(x-1)^2}$ $\quad \text{LCD} = 12x(x-1)^2$

$\text{LCD} = 12x(x-1)^2$ the LCM of the numbers, then every factor at its highest power

Problems 1 and 2 worked out · Version 0A

$\frac{9}{4x(x+4)}, \quad \frac{5}{6(x+4)^2}$ $\quad \text{LCD} = 12x(x+4)^2$

$\text{LCD} = 12x(x+4)^2$ the LCM of the numbers, then every factor at its highest power

$\frac{5}{3x(x+6)}, \quad \frac{7}{6(x+6)^2}$ $\quad \text{LCD} = 6x(x+6)^2$

$\text{LCD} = 6x(x+6)^2$ the LCM of the numbers, then every factor at its highest power

The least common denominator · Version 0A

1) $12x(x+4)^2$ 2) $6x(x+6)^2$
3) $(x-3)(x-2)(x+1)$ 4) $12x^3$ 5) $6x(x-2)^2$
6) $(x-4)(x+5)(x+1)$ 7) $4x^3$ 8) $4x^3$
9) $6x(x-4)^2$ 10) $24x^3$ 11) $18x(x-2)^2$ 12) $4x^3$
13) $36x(x+2)^2$ 14) $6x(x-6)^2$ 15) $60x^2$ 16) $36x^3$
17) $30x^2$