Solutions to Quiz over Addition & Subtraction

① $\frac{1}{6x} + \frac{5}{14x^2}$

$2 \cdot 3 \cdot x$ $\quad 2 \cdot 7 \cdot x^2$

(A) LCD $= 2 \cdot 3 \cdot 7 \cdot x \cdot x = 42x^3$

(B) $\frac{1}{6x} \cdot \frac{7x}{7x} + \frac{5}{14x^2} \cdot \frac{3}{3}$

(C) $\frac{7x}{42x^3} + \frac{15}{42x^3} = \boxed{\frac{7x+15}{42x^3}}$

(D)

② $\frac{5x}{x-3} - \frac{x+1}{x+4}$

(A) LCD $(x-3)(x+4)$

(B) $\frac{5x}{x-3}\frac{(x+4)}{(x+4)} + \frac{-1(x+1)}{(x+4)}\frac{(x-3)}{(x-3)}$

(C) $\frac{5x^2+20x}{LCD} + \frac{-1(x^2+1x-3x-3)}{LCD}$

$\frac{5x^2+20x-x^2-x+3x+3}{LCD}$

(D) $\boxed{\frac{4x^2+22x+3}{(x-3)(x+4)}}$

OR $\boxed{\frac{4x^2+22x+3}{x^2+1x-12}}$

③

	4	22	3
		12	68
4	34	71	

④

	4	22	3
		−16	−24
4	6	−2	

Solutions to Quiz over 1/- Rational Expressions

(2) $\frac{3}{4x^2-36} + \frac{1}{3x^2+4x-15} =$ (A) $\frac{3}{4(x^2-9)} + \frac{1}{(3x-5)(x+3)}$ (B)

$-45x^2$

1 45

3 15

5 9 → $+9x-5x$

Grouping $3x^2+9x-5x-15$

$3x(x+3)-5(x+3)$

$(3x-5)(x+3)$

$\frac{3}{4(x-3)(x+3)} + \frac{1}{(3x-5)(x+3)}$ (C)

LCD $4(x-3)(x+3)(x+3)(3x-5)$

$4(x-3)(x+3)(3x-5)$ (D)

(E) $\frac{3(3x-5)}{LCD} + \frac{1(4(x-3)}{LCD}$

(F) $\frac{9x-15}{LCD} + \frac{4x-12}{LCD}$

(G) $\frac{13x-27}{4(x-3)(x+3)(3x-5)}$

(A) (B) (C) (D) (E) (F) (G)

Solutions to Quiz +/- Rational Expression

(4) $\dfrac{2}{x^2-12x+20} - \dfrac{3}{x^2-10x+16}$

$\dfrac{2}{(x-10)(x-2)} + \dfrac{-3}{(x-2)(x-8)}$

(A) (C) (B)

LCD $(x-10)(x-2)$

$(x-2)(x-8)$

LCD $(x-10)(x-2)(x-8)$ (D)

$\dfrac{2}{(x-10)(x-2)} \cdot \dfrac{(x-8)}{(x-8)} + \dfrac{-3}{(x-2)(x-8)} \cdot \dfrac{(x-10)}{(x-10)}$ (E)

$\dfrac{2x-16}{LCD} + \dfrac{-3x+30}{LCD} = \dfrac{-1x+14}{(x-2)(x-8)(x-10)}$

(F) (G)

Solutions to Quiz 1/- Rational Expressions

⑤ $\frac{5}{3x+12} + \frac{3x}{2x^2-50} = \frac{5}{3(x+4)} + \frac{3x}{2(x^2-25)}$ (A) (B)

Note LCD = $(3x+12)(2x^2-50)$ because nothing in common

$3(x+4)$

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

$\boxed{2 \cdot 3(x+4)(x-5)(x+5)}$ → LCD (C)

$\frac{5}{(3x+12)} \cdot \frac{(2x^2-50)}{(2x^2-50)} + \frac{3x}{(2x^2-50)} \cdot \frac{(3x+12)}{(3x+12)}$

(D) (E)

$\frac{10x^2-250}{LCD} + \frac{9x^2+36x}{LCD}$

$\boxed{\frac{19x^2+36x-250}{6(x+4)(x-5)(x+5)}}$

$-4 \mid 19 \quad 36 \quad -250$

$\quad\quad -76 \quad 160$

$19 \quad -40 \mid -410$

$5 \mid 19 \quad 36 \quad -250$

$\quad\quad 95 \quad 655$

$19 \quad 131 \mid 405$

$-5 \mid 19 \quad 36 \quad -250$

$\quad\quad -95 \quad 295$

$19 \quad -59 \mid 45$

Solutions to Quiz 4/- Rational Expressions

(6) $\frac{1}{2x-14} - \frac{3}{x+7} + \frac{3}{x^2-49}$

(B) $\frac{1}{2(x-7)} + \frac{-3}{(x+7)} + \frac{3}{(x-7)(x+7)}$ (A)

LCD $2(x-7)(x+7)$ → (C)

$\frac{1}{2(x-7)}\cdot\frac{(x+7)}{(x+7)} + \frac{-3}{(x+7)}\cdot\frac{2(x-7)}{2(x-7)} + \frac{3}{(x-7)(x+7)}\cdot\frac{2}{2}$

(D) (E) (F)

$\frac{x+7}{LCD} + \frac{-6x+42}{LCD} + \frac{6}{LCD}$

(G) (H)

$\frac{-5x+55}{2(x+7)(x-7)} = \frac{-5x+55}{2x^2-98}$