

Adding + Subtracting Rational Exp

Ⓧ $\frac{2}{3} + \frac{4}{5} = \frac{2(5) + 4(3)}{15} = \boxed{\frac{22}{15}}$

Ⓧ $\frac{2y+1}{3y} + \frac{5y+4}{3y} = \frac{7y+5}{3y}$

Ⓧ $\frac{y}{y-1} + \frac{2}{y+1} = \frac{y(y+1) + 2(y-1)}{(y-1)(y+1)} = \frac{y^2+y+2y-2}{(y-1)(y+1)} = \boxed{\frac{y^2+3y-2}{(y-1)(y+1)}}$

Ⓧ $\frac{2x}{3x+5} - \frac{5}{x+7} = \frac{2x(x+7) - 5(3x+5)}{(3x+5)(x+7)} = \frac{2x^2+14x-15x-25}{(3x+5)(x+7)}$
 $= \boxed{\frac{2x^2-x-25}{(3x+5)(x+7)}}$

~~$\frac{2x^2-x-25}{x^2-x-50}$~~

Ⓧ $\frac{x}{x^2+5x+6} - \frac{2}{x^2+3x+2}$

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

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

$= \frac{(x-3)\cancel{(x+2)}}{(x+2)(x+3)(x+1)} = \boxed{\frac{x-3}{(x+3)(x+1)}}$ or $\boxed{\frac{x-3}{x^2+4x+3}}$

$$\textcircled{\text{ex}} \quad \frac{1}{1} + \frac{2x+7}{3x-1} = \frac{1(3x-1) + 2x+7}{3x-1} = \frac{3x-1+2x+7}{3x-1}$$

$$= \boxed{\frac{5x+6}{3x-1}}$$