76) $\frac{7}{24} + \frac{11}{24} = \frac{7+11}{24} = \frac{18}{24} = \frac{9}{12} = \frac{3}{4}$

78) $\frac{7m}{2m+n} + \frac{4}{2m+n} = \frac{(7m)+(4)}{2m+n} = \frac{7m+4}{2m+n}$

80) $\frac{3s^2}{3s-2} + \frac{13s-10}{3s-2} = \frac{(3s^2)+(13s-10)}{3s-2} = \frac{3s^2+13s-10}{3s-2} = \frac{(s+5)(3s-2)}{(3s-2)} = s+5$

82) $\frac{7x^2}{x^2-9} + \frac{21x}{x^2-9} = \frac{(7x^2)+(21x)}{x^2-9} = \frac{7x^2+21x}{x^2-9} = \frac{7x(x+3)}{(x+3)(x-3)} = \frac{7x}{x-3}$

84) $\frac{25b^2}{5b-6} - \frac{36}{5b-6} = \frac{(25b^2)-(36)}{5b-6} = \frac{25b^2-36}{5b-6} = \frac{(5b)^2-(6)^2}{5b-6}$

$= \frac{(5b+6)(5b-6)}{(5b-6)} = 5b+6$

86) $\frac{2n^2}{4n-32} - \frac{18n-16}{4n-32} = \frac{(2n^2)-(18n-16)}{4n-32} = \frac{2n^2-18n+16}{4n-32}$

$= \frac{2(n^2-9n+8)}{4(n-8)} = \frac{2(n-1)(n-8)}{4(n-8)} = \frac{n-1}{2}$

88) $\dfrac{5q^2+3q-9}{q^2+6q+8} - \dfrac{4q^2+9q+7}{q^2+6q+8} = \dfrac{(5q^2+3q-9)-(4q^2+9q+7)}{q^2+6q+8}$

$= \dfrac{5q^2+3q-9-4q^2-9q-7}{q^2+6q+8} = \dfrac{q^2-6q-16}{q^2+6q+8} = \dfrac{(q+2)(q-8)}{(q+4)(q+2)} = \dfrac{q-8}{q+4}$

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90) $\dfrac{7t^2-t-4}{t^2-25} - \dfrac{6t^2+12t-44}{t^2-25} = \dfrac{(7t^2-t-4)-(6t^2+12t-44)}{t^2-25}$

$= \dfrac{7t^2-t-4-6t^2-12t+44}{t^2-25} = \dfrac{t^2-13t+40}{t^2-25} = \dfrac{(t-5)(t-8)}{(t+5)(t-5)} = \dfrac{t-8}{t+5}$

---

92) $\dfrac{20w}{5w-2} + \dfrac{5w+6}{2-5w} = \dfrac{20w}{5w-2} + \dfrac{5w+6}{-5w+2} = \dfrac{20w}{5w-2} + \dfrac{5w+6}{-1(5w-2)}$

$= \dfrac{20w}{5w-2} + \left(\dfrac{-1(5w+6)}{5w-2}\right) = \dfrac{20w}{5w-2} - \dfrac{5w+6}{5w-2} = \dfrac{(20w)-(5w+6)}{5w-2}$

$= \dfrac{20w-5w-6}{5w-2} = \dfrac{15w-6}{5w-2} = \dfrac{3(5w-2)}{(5w-2)} = 3$

---

94) $\dfrac{6y^2+2y-11}{3y-7} + \dfrac{3y^2-3y+17}{7-3y} = \dfrac{6y^2+2y-11}{3y-7} + \dfrac{3y^2-3y+17}{-3y+7}$

$= \dfrac{6y^2+2y-11}{3y-7} + \dfrac{3y^2-3y+17}{-1(3y-7)} = \dfrac{6y^2+2y-11}{3y-7} + \left(\dfrac{-1(3y^2-3y+17)}{3y-7}\right)$

$= \dfrac{6y^2+2y-11}{3y-7} - \dfrac{3y^2-3y+17}{3y-7} = \dfrac{(6y^2+2y-11)-(3y^2-3y+17)}{3y-7} = \dfrac{6y^2+2y-11-3y^2+3y-17}{3y-7}$

$= \dfrac{3y^2+5y-28}{3y-7} = \dfrac{(y+4)(3y-7)}{(3y-7)} = y+4$

96) $\frac{a^2+3a}{a^2-9} - \frac{3a-27}{9-a^2} = \frac{a^2+3a}{a^2-9} - \frac{3a-27}{-a^2+9} = \frac{a^2+3a}{a^2-9} - \frac{3a-27}{-1(a^2-9)}$

$= \frac{a^2+3a}{a^2-9} - \left(\frac{-1(3a-27)}{a^2-9}\right) = \frac{a^2+3a}{a^2-9} + \frac{3a-27}{a^2-9} = \frac{(a^2+3a)+(3a-27)}{a^2-9}$

$= \frac{a^2+3a+3a-27}{a^2-9} = \frac{a^2+6a-27}{a^2-9} = \frac{(a+9)(a-3)}{(a+3)(a-3)} = \frac{a+9}{a+3}$

---

98) $\frac{c^2+5c-10}{c^2-16} - \frac{c^2-8c-10}{16-c^2} = \frac{c^2+5c-10}{c^2-16} - \frac{c^2-8c-10}{-c^2+16}$

$= \frac{c^2+5c-10}{c^2-16} - \frac{c^2-8c-10}{-1(c^2-16)} = \frac{c^2+5c-10}{c^2-16} - \left(\frac{-1(c^2-8c-10)}{c^2-16}\right)$

$= \frac{c^2+5c-10}{c^2-16} + \frac{c^2-8c-10}{c^2-16} = \frac{(c^2+5c-10)+(c^2-8c-10)}{c^2-16}$

$= \frac{c^2+5c-10+c^2-8c-10}{c^2-16} = \frac{2c^2-3c-20}{c^2-16} = \frac{(2c+5)(c-4)}{(c+4)(c-4)} = \frac{2c+5}{c+4}$

---

100) $\frac{8}{y^2+12y+35} = \frac{8}{(y+7)(y+5)} = \frac{8}{(y+7)(y+5)}\left(\frac{(y-6)}{(y-6)}\right) = \frac{8(y-6)}{(y+7)(y+5)(y-6)}$

LCD $= (y+5)(y+7)(y-6)$

$\frac{3y}{y^2+y-42} = \frac{3y}{(y+7)(y-6)}$

$= \frac{8y-48}{(y+7)(y+5)(y-6)}$

$= \frac{3y}{(y+7)(y-6)}\left(\frac{(y+5)}{(y+5)}\right) = \frac{3y(y+5)}{(y+7)(y+5)(y-6)} = \frac{3y^2+15y}{(y+7)(y+5)(y-6)}$

102) $\frac{6}{a^2+14a+45} = \frac{6}{(a+9)(a+5)} = \frac{6}{(a+9)(a+5)}\left(\frac{(a-9)}{(a-9)}\right) = \frac{6(a-9)}{(a+5)(a+9)(a-9)} = \frac{6a-54}{(a+5)(a+9)(a-9)}$

$LCD = (a+5)(a+9)(a-9)$

$\frac{5a}{a^2-81} = \frac{5a}{(a+9)(a-9)} = \frac{5a}{(a+9)(a-9)}\left(\frac{(a+5)}{(a+5)}\right) = \frac{5a(a+5)}{(a+5)(a+9)(a-9)} = \frac{5a^2+25a}{(a+5)(a+9)(a-9)}$

---

104) $\frac{5}{c^2-4c+4} = \frac{5}{(c-2)(c-2)} = \frac{5}{(c-2)^2}\left(\frac{(c-5)}{(c-5)}\right) = \frac{5(c-5)}{(c-2)^2(c-5)} = \frac{5c-25}{(c-2)^2(c-5)}$

$LCD = (c-2)^2(c-5)$

$\frac{3c}{c^2-7c+10} = \frac{3c}{(c-2)(c-5)} = \frac{3c}{(c-2)(c-5)}\left(\frac{(c-2)}{(c-2)}\right) = \frac{3c(c-2)}{(c-2)^2(c-5)} = \frac{3c^2-6c}{(c-2)^2(c-5)}$

---

106) $\frac{3}{5m^2-3m-2} = \frac{3}{(5m+2)(m-1)} = \frac{3}{(5m+2)(m-1)}\left(\frac{(m+3)}{(m+3)}\right) = \frac{3(m+3)}{(5m+2)(m+3)(m-1)} = \frac{3m+9}{(5m+2)(m+3)(m-1)}$

$LCD = (5m+2)(m+3)(m-1)$

$\frac{6m}{5m^2+17m+6} = \frac{6m}{(5m+2)(m+3)} = \frac{6m}{(5m+2)(m+3)}\left(\frac{(m-1)}{(m-1)}\right) = \frac{6m(m-1)}{(5m+2)(m+3)(m-1)} = \frac{6m^2-6m}{(5m+2)(m+3)(m-1)}$

---

108) $\frac{1}{12a^3b^2} + \frac{5}{9a^2b^3} = \frac{1}{(2)^2(3)^1a^3b^2} + \frac{5}{(3)^2a^2b^3}$

$LCD = (2)^2(3)^2a^3b^3 = 36a^3b^3$

$= \left(\frac{1}{(2)^2(3)^1a^3b^2}\right)\left(\frac{3b}{3b}\right) + \left(\frac{5}{(3)^2a^2b^3}\right)\left(\frac{(2)^2a}{(2)^2a}\right) = \frac{1(3b)+5((2)^2a)}{(2)^2(3)^2a^3b^3}$

$= \frac{3b+20a}{36a^3b^3}$

110) $\frac{4}{s-7} + \frac{5}{s+3} = \frac{4}{(s-7)} + \frac{5}{(s+3)}$ LCD $= (s+3)(s-7)$

$= \left(\frac{4}{(s-7)}\right)\left(\frac{(s+3)}{(s+3)}\right) + \left(\frac{5}{(s+3)}\right)\left(\frac{(s-7)}{(s-7)}\right) = \frac{4(s+3)+5(s-7)}{(s+3)(s-7)}$

$= \frac{4s+12+5s-35}{(s+3)(s-7)} = \underline{\underline{\frac{9s-23}{(s+3)(s-7)}}}$

---

112) $\frac{4}{2x+5} + \frac{2}{x-1} = \frac{4}{(2x+5)} + \frac{2}{(x-1)}$ LCD $= (2x+5)(x-1)$

$= \left(\frac{4}{(2x+5)}\right)\left(\frac{(x-1)}{(x-1)}\right) + \left(\frac{2}{(x-1)}\right)\left(\frac{(2x+5)}{(2x+5)}\right) = \frac{4(x-1)+2(2x+5)}{(2x+5)(x-1)}$

$= \frac{4x-4+4x+20}{(2x+5)(x-1)} = \underline{\underline{\frac{8x+16}{(2x+5)(x-1)}}}$

---

114) $\frac{3z}{z-2} + \frac{1}{z+5} = \frac{3z}{(z-2)} + \frac{1}{(z+5)}$ LCD $= (z+5)(z-2)$

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

$= \frac{3z^2+15z+z-2}{(z+5)(z-2)} = \underline{\underline{\frac{3z^2+16z-2}{(z+5)(z-2)}}}$

116) $\frac{4}{cd+3c} + \frac{1}{d^2-9} = \frac{4}{c(d+3)} + \frac{1}{(d+3)(d-3)}$ LCD = $c(d+3)(d-3)$

$= \left(\frac{4}{c(d+3)}\right)\left(\frac{(d-3)}{(d-3)}\right) + \left(\frac{1}{(d+3)(d-3)}\right)\left(\frac{c}{c}\right) = \frac{4(d-3)+1(c)}{c(d+3)(d-3)}$

$= \frac{4d-12+c}{c(d+3)(d-3)}$

---

118) $\frac{8}{4n+4} + \frac{6}{n^2-n-2} = \frac{8}{4(n+1)} + \frac{6}{(n+1)(n-2)}$ LCD = $4(n+1)(n-2)$

$= \left(\frac{8}{4(n+1)}\right)\left(\frac{(n-2)}{(n-2)}\right) + \left(\frac{6}{(n+1)(n-2)}\right)\left(\frac{4}{4}\right) = \frac{8(n-2)+6(4)}{4(n+1)(n-2)}$

$= \frac{8n-16+24}{4(n+1)(n-2)} = \frac{8n+8}{4(n+1)(n-2)} = \frac{\cancel{8}^{2}\cancel{(n+1)}^{1}}{\cancel{4}_{1}\cancel{(n+1)}_{1}(n-2)} = \frac{2}{n-2}$

---

120) $\frac{2s}{s^2+2s-8} + \frac{4}{s^2+3s-10} = \frac{2s}{(s+4)(s-2)} + \frac{4}{(s+5)(s-2)}$ LCD = $(s+5)(s+4)(s-2)$

$= \left(\frac{2s}{(s+4)(s-2)}\right)\left(\frac{(s+5)}{(s+5)}\right) + \left(\frac{4}{(s+5)(s-2)}\right)\left(\frac{(s+4)}{(s+4)}\right) = \frac{2s(s+5)+4(s+4)}{(s+5)(s+4)(s-2)}$

$= \frac{2s^2+10s+4s+16}{(s+5)(s+4)(s-2)} = \frac{2s^2+14s+16}{(s+5)(s+4)(s-2)} = \frac{2(s^2+7s+8)}{(s+5)(s+4)(s-2)}$

122) $\frac{x-3}{x+6} - \frac{x}{x+3} = \frac{(x-3)}{(x+6)} - \frac{x}{(x+3)}$ LCD $= (x+6)(x+3)$

$= \left(\frac{(x-3)}{(x+6)}\right)\left(\frac{(x+3)}{(x+3)}\right) - \left(\frac{x}{(x+3)}\right)\left(\frac{(x+6)}{(x+6)}\right) = \frac{(x-3)(x+3) - x(x+6)}{(x+6)(x+3)}$

$= \frac{x^2-9-x^2-6x}{(x+6)(x+3)} = \frac{-6x-9}{(x+6)(x+3)} = \frac{-3(2x+3)}{(x+6)(x+3)}$

---

124) $\frac{3b}{b-2} - \frac{b-6}{b-8} = \frac{3b}{(b-2)} - \frac{(b-6)}{(b-8)}$ LCD $= (b-2)(b-8)$

$= \left(\frac{3b}{(b-2)}\right)\left(\frac{(b-8)}{(b-8)}\right) - \left(\frac{(b-6)}{(b-8)}\right)\left(\frac{(b-2)}{(b-2)}\right) = \frac{3b(b-8) - (b-6)(b-2)}{(b-2)(b-8)}$

$= \frac{\{3b^2-24b\} - \{b^2-8b+12\}}{(b-2)(b-8)} = \frac{3b^2-24b-b^2+8b-12}{(b-2)(b-8)}$

$= \frac{2b^2-16b-12}{(b-2)(b-8)} = \frac{2(b^2-8b-6)}{(b-2)(b-8)}$

---

126) $\frac{4}{n+4} - \frac{8n}{n^2-16} = \frac{4}{(n+4)} - \frac{8n}{(n+4)(n-4)}$ LCD $= (n+4)(n-4)$

$= \left(\frac{4}{(n+4)}\right)\left(\frac{(n-4)}{(n-4)}\right) - \frac{8n}{(n+4)(n-4)} = \frac{4(n-4) - 8n}{(n+4)(n-4)}$

$= \frac{4n-16-8n}{(n+4)(n-4)} = \frac{-4n-16}{(n+4)(n-4)} = \frac{-4\cancel{(n+4)}}{\cancel{(n+4)}(n-4)} = \frac{-4}{n-4}$

128) $\dfrac{-13q+8}{q^2+2q-24} - \dfrac{q+2}{4-q} = \dfrac{(-13q+8)}{(q+6)(q-4)} - \dfrac{(q+2)}{-1(q-4)}$

$= \dfrac{(-13q+8)}{(q+6)(q-4)} + \dfrac{(q+2)}{(q-4)}$ LCD $= (q+6)(q-4)$

$= \dfrac{(-13q+8)}{(q+6)(q-4)} + \left(\dfrac{(q+2)}{(q-4)}\right)\left(\dfrac{(q+6)}{(q+6)}\right) = \dfrac{(-13q+8)+(q+2)(q+6)}{(q+6)(q-4)}$

$= \dfrac{-13q+8+q^2+8q+12}{(q+6)(q-4)} = \underline{\underline{\dfrac{q^2-5q+20}{(q+6)(q-4)}}}$

---

130) $\dfrac{2t-30}{t^2+6t-27} - \dfrac{2}{3-t} = \dfrac{(2t-30)}{(t+9)(t-3)} - \dfrac{2}{-1(t-3)}$

$= \dfrac{(2t-30)}{(t+9)(t-3)} + \dfrac{2}{(t-3)}$ LCD $= (t+9)(t-3)$

$= \dfrac{(2t-30)}{(t+9)(t-3)} + \left(\dfrac{2}{(t-3)}\right)\left(\dfrac{(t+9)}{(t+9)}\right) = \dfrac{(2t-30)+2(t+9)}{(t+9)(t-3)}$

$= \dfrac{2t-30+2t+18}{(t+9)(t-3)} = \dfrac{4t-12}{(t+9)(t-3)} = \dfrac{4\cancel{(t-3)}^{1}}{(t+9)\cancel{(t-3)}_{1}} = \underline{\underline{\dfrac{4}{t+9}}}$

LCD $= (5y+2)$

132) $\dfrac{8y-4}{5y+2} - 6 = \dfrac{(8y-4)}{(5y+2)} - \left(\dfrac{6}{1}\right)\left(\dfrac{(5y+2)}{(5y+2)}\right) = \dfrac{(8y-4)-6(5y+2)}{(5y+2)}$

$= \dfrac{8y-4-30y-12}{5y+2} = \dfrac{-22y-16}{5y+2} = \underline{\underline{\dfrac{-2(11y+8)}{5y+2}}}$

134) $\dfrac{4}{x^2-6x+5} - \dfrac{3}{x^2-7x+10} = \dfrac{4}{(x-1)(x-5)} - \dfrac{3}{(x-2)(x-5)}$ LCD = $(x-1)(x-2)(x-5)$

$= \left(\dfrac{4}{(x-1)(x-5)}\right)\left(\dfrac{(x-2)}{(x-2)}\right) - \left(\dfrac{3}{(x-2)(x-5)}\right)\left(\dfrac{(x-1)}{(x-1)}\right) = \dfrac{4(x-2)-3(x-1)}{(x-1)(x-2)(x-5)}$

$= \dfrac{4x-8-3x+3}{(x-1)(x-2)(x-5)} = \dfrac{x-5}{(x-1)(x-2)(x-5)} = \dfrac{\cancel{(x-5)}^{1}}{(x-1)(x-2)\cancel{(x-5)}_{1}} = \underline{\underline{\dfrac{1}{(x-1)(x-2)}}}$

---

136) $\dfrac{3}{2x^2+5x+2} - \dfrac{1}{2x^2+3x+1} = \dfrac{3}{(x+2)(2x+1)} - \dfrac{1}{(x+1)(2x+1)}$ LCD = $(x+2)(x+1)(2x+1)$

$= \left(\dfrac{3}{(x+2)(2x+1)}\right)\left(\dfrac{(x+1)}{(x+1)}\right) - \left(\dfrac{1}{(x+1)(2x+1)}\right)\left(\dfrac{(x+2)}{(x+2)}\right) = \dfrac{3(x+1)-1(x+2)}{(x+2)(x+1)(2x+1)}$

$= \dfrac{3x+3-x-2}{(x+2)(x+1)(2x+1)} = \dfrac{2x+1}{(x+2)(x+1)(2x+1)} = \dfrac{\cancel{(2x+1)}^{1}}{(x+2)(x+1)\cancel{(2x+1)}_{1}} = \underline{\underline{\dfrac{1}{(x+2)(x+1)}}}$

---

138) $\dfrac{2b}{b-5} + \dfrac{3}{2b} - \dfrac{2b-15}{2b^2-10b} = \dfrac{2b}{(b-5)} + \dfrac{3}{2b} - \dfrac{(2b-15)}{2b(b-5)}$ LCD = $2b(b-5)$

$= \left(\dfrac{2b}{(b-5)}\right)\left(\dfrac{2b}{2b}\right) + \left(\dfrac{3}{2b}\right)\left(\dfrac{(b-5)}{(b-5)}\right) - \dfrac{(2b-15)}{2b(b-5)} = \dfrac{2b(2b)+3(b-5)-(2b-15)}{2b(b-5)}$

$= \dfrac{4b^2+3b-15-2b+15}{2b(b-5)} = \dfrac{4b^2+b}{2b(b-5)} = \dfrac{\cancel{b}^{1}(4b+1)}{2\cancel{b}_{1}(b-5)} = \underline{\underline{\dfrac{4b+1}{2(b-5)}}}$

140) $\frac{6d}{d-5} + \frac{1}{d+4} - \frac{7d-5}{d^2-d-20} = \frac{6d}{(d-5)} + \frac{1}{(d+4)} - \frac{(7d-5)}{(d+4)(d-5)}$ LCD = $(d+4)(d-5)$

$= \left(\frac{6d}{(d-5)}\right)\left(\frac{(d+4)}{(d+4)}\right) + \left(\frac{1}{(d+4)}\right)\left(\frac{(d-5)}{(d-5)}\right) - \frac{(7d-5)}{(d+4)(d-5)}$

$= \frac{6d(d+4) + (d-5) - (7d-5)}{(d+4)(d-5)} = \frac{6d^2+24d+d-5-7d+5}{(d+4)(d-5)}$

$= \frac{6d^2+18d}{(d+4)(d-5)} = \frac{6d(d+3)}{(d+4)(d-5)}$

---

142) $\frac{2q}{q+5} + \frac{3}{q-3} - \frac{13q+15}{q^2+2q-15} = \frac{2q}{(q+5)} + \frac{3}{(q-3)} - \frac{(13q+15)}{(q+5)(q-3)}$ LCD = $(q+5)(q-3)$

$= \left(\frac{2q}{(q+5)}\right)\left(\frac{(q-3)}{(q-3)}\right) + \left(\frac{3}{(q-3)}\right)\left(\frac{(q+5)}{(q+5)}\right) - \frac{(13q+15)}{(q+5)(q-3)}$

$= \frac{2q(q-3) + 3(q+5) - (13q+15)}{(q+5)(q-3)} = \frac{2q^2-6q+3q+15-13q-15}{(q+5)(q-3)}$

$= \frac{2q^2-16q}{(q+5)(q-3)} = \frac{2q(q+8)}{(q+5)(q-3)}$

144) $f(x) = \dfrac{-4x-24}{x^2+x-30} = \dfrac{(-4x-24)}{(x+6)(x-5)}$

LCD $= (x+6)(x-5)$

$g(x) = \dfrac{x+7}{5-x} = \dfrac{(x+7)}{-1(x-5)} = \dfrac{-1(x+7)}{(x-5)}$

a) $R(x) = f(x)+g(x) = \left\{\dfrac{(-4x-24)}{(x+6)(x-5)}\right\} + \left\{\dfrac{-1(x+7)}{(x-5)}\right\} = \dfrac{(-4x-24)}{(x+6)(x-5)} - \dfrac{(x+7)}{(x-5)}$

$= \dfrac{(-4x-24)}{(x+6)(x-5)} - \left(\dfrac{(x+7)}{(x-5)}\right)\left(\dfrac{(x+6)}{(x+6)}\right) = \dfrac{(-4x-24)-(x+7)(x+6)}{(x+6)(x-5)}$

$= \dfrac{(-4x-24)-\{x^2+13x+42\}}{(x+6)(x-5)} = \dfrac{-4x-24-x^2-13x-42}{(x+6)(x-5)}$

$= \dfrac{-x^2-17x-66}{(x+6)(x-5)} = \dfrac{-1(x^2+17x+66)}{(x+6)(x-5)} = \dfrac{-1(x+11)\cancel{(x+6)}^{1}}{\cancel{(x+6)}_{1}(x-5)} = \underline{\underline{\dfrac{-1(x+11)}{x-5}}}$

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b) $R(x) = f(x)-g(x) = \left\{\dfrac{(-4x-24)}{(x+6)(x-5)}\right\} - \left\{\dfrac{-1(x+7)}{(x-5)}\right\} = \dfrac{(-4x-24)}{(x+6)(x-5)} + \dfrac{(x+7)}{(x-5)}$

$= \dfrac{(-4x-24)}{(x+6)(x-5)} + \left(\dfrac{(x+7)}{(x-5)}\right)\left(\dfrac{(x+6)}{(x+6)}\right) = \dfrac{(-4x-24)+(x+7)(x+6)}{(x+6)(x-5)}$

$= \dfrac{-4x-24+x^2+13x+42}{(x+6)(x-5)} = \dfrac{x^2+9x+18}{(x+6)(x-5)} = \dfrac{\cancel{(x+6)}^{1}(x+3)}{\cancel{(x+6)}_{1}(x-5)}$

$= \underline{\underline{\dfrac{x+3}{x-5}}}$

146) $f(x) = \frac{5}{x+7} = \frac{5}{(x+7)}$

$LCD = (x+7)(x-7)$

$g(x) = \frac{10x}{x^2-49} = \frac{10x}{(x+7)(x-7)}$

a) $R(x) = f(x) + g(x) = \left\{\frac{5}{(x+7)}\right\} + \left\{\frac{10x}{(x+7)(x-7)}\right\} = \frac{5}{(x+7)} + \frac{10x}{(x+7)(x-7)}$

$= \left(\frac{5}{(x+7)}\right)\left(\frac{(x-7)}{(x-7)}\right) + \frac{10x}{(x+7)(x-7)} = \frac{5(x-7)+10x}{(x+7)(x-7)}$

$= \frac{5x-35+10x}{(x+7)(x-7)} = \frac{15x-35}{(x+7)(x-7)} = \frac{5(3x-7)}{(x+7)(x-7)}$

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b) $R(x) = f(x) - g(x) = \left\{\frac{5}{(x+7)}\right\} - \left\{\frac{10x}{(x+7)(x-7)}\right\} = \frac{5}{(x+7)} - \frac{10x}{(x+7)(x-7)}$

$= \left(\frac{5}{(x+7)}\right)\left(\frac{(x-7)}{(x-7)}\right) - \frac{10x}{(x+7)(x-7)} = \frac{5(x-7)-10x}{(x+7)(x-7)}$

$= \frac{5x-35-10x}{(x+7)(x-7)} = \frac{-5x-35}{(x+7)(x-7)} = \frac{-5(x+7)}{(x+7)(x-7)} = \frac{-5}{x-7}$