Name KEY Period_____ Date_____

Complex Fraction Review Problems MA1 Honors

1) $\dfrac{\frac{5x^2}{9y^2}}{\frac{3x}{y^2x}} = \dfrac{5x^2}{9y^2} \cdot \dfrac{y^2x}{3x}$

$= \dfrac{5x^3y^2}{27xy^2} = \boxed{\dfrac{5x^2}{27}}$

2) $\dfrac{\frac{3w^2}{4rs}}{\frac{15wr}{s^2}} = \dfrac{3w^2}{4rs} \cdot \dfrac{s^2}{15wr}$

$= \dfrac{3w^2s^2}{60r^2sw} = \boxed{\dfrac{ws}{20r^2}}$

3) $\dfrac{\frac{7y}{y+3}}{\frac{1}{4y+12}} = \dfrac{\frac{7y}{y+3}}{\frac{1}{4(y+3)}}$

$\dfrac{7y}{y+3} \cdot \dfrac{4(y+3)}{1} = \boxed{28y}$

4) $\dfrac{\left(\frac{1}{x} - 3\right)x}{\left(\frac{1}{x} + 3\right)x} = \boxed{\dfrac{1-3x}{1+3x}}$

5) $\dfrac{(-8)(w-1)}{\left(\frac{6w}{w-1} - 4\right)(w-1)}$

$\dfrac{-8(w-1)}{6w-4(w-1)} = \dfrac{-8w+8}{6w-4w+4}$

$= \dfrac{-8(w-1)}{2(w+2)} = \boxed{\dfrac{-4(w-1)}{w+2}}$

6) $\dfrac{\left(\frac{2}{a} + \frac{3}{a^2}\right)a^2}{\left(\frac{4}{a^2} - \frac{9}{a}\right)a^2} = \boxed{\dfrac{2a+3}{4-9a}}$

7) $\dfrac{d^{-2} - c^{-2}}{c^{-1} - d^{-1}} = \dfrac{\left(\frac{1}{d^2} - \frac{1}{c^2}\right)c^2d^2}{\left(\frac{1}{c} - \frac{1}{d}\right)c^2d^2}$

$\dfrac{c^2-d^2}{cd^2-c^2d} = \dfrac{-1(c-d)(c+d)}{cd(d-c)} = \boxed{\dfrac{-(c+d)}{cd}}$

8) $\dfrac{\left(\frac{1}{a-1} + 1\right)(a-1)(a+1)}{\left(\frac{1}{a+1} - 1\right)(a-1)(a+1)}$

$= \dfrac{a+1+(a-1)(a+1)}{(a-1)-(a-1)(a+1)}$

$= \boxed{\dfrac{a+1}{1-a}}$

9) $\dfrac{\left(\frac{1}{t-4} + \frac{1}{t+5}\right)(t-4)(t+5)}{\left(\frac{6}{t+5} + \frac{2}{t-4}\right)(t-4)(t+5)}$

$\dfrac{t+5+t-4}{6(t-4)+2(t+5)} = \dfrac{t+1}{8t-14}$

$\boxed{\dfrac{t+1}{8t-14}}$

10) $\dfrac{\left(\frac{2}{a} - \frac{3}{a+1}\right)a(a+1)}{\left(\frac{2}{a+1} - \frac{3}{a}\right)a(a+1)}$

$\dfrac{2(a+1)-3a}{2a-3(a+1)}$

$\dfrac{2a+2-3a}{2a-3a-3} = \boxed{\dfrac{-a+2}{-a-3}}$

11) $\dfrac{\frac{x}{x+3} - \frac{4}{2x+1}}{\frac{3}{2x+1} + \frac{6}{x^2-9}}$

↳ ON BACK

12) $\dfrac{\frac{2x}{5x^2-13x-6} + \frac{1}{x-3}}{\frac{4}{5x+2} - \frac{5x}{5x^2-3x-2}}$

↳ ON BACK

(11) $$\frac{\left(\frac{x}{x+3}-\frac{4}{2x+1}\right)(x-3)(x+3)(2x+1)}{\left(\frac{3}{2x+1}+\frac{6}{(x-3)(x+3)}\right)(x-3)(x+3)(2x+1)}$$

$$\frac{x(x-3)(2x+1)-4(x-3)(x+3)}{3(x-3)(x+3)+6(2x+1)} = \frac{x(2x^2-5x-3)-4(x^2-9)}{3(x^2-9)+12x+6}$$

$$= \frac{2x^3-5x^2-3x-4x^2+36}{3x^2-27+12x+6} = \boxed{\frac{2x^3-9x^2-3x+36}{3x^2+12x-21}}$$

(12) $$\frac{\left(\frac{2x}{(5x+2)(x-3)}+\frac{1}{x-3}\right)(5x+2)(x-1)(x-3)}{\left(\frac{4}{5x+2}-\frac{5x}{(5x+2)(x-1)}\right)(5x+2)(x-1)(x-3)}$$

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

$$\frac{7x^2-5x-2}{4x^2-16x+12-5x^2+15x} = \boxed{\frac{7x^2-5x-2}{-x^2-x+12}}$$