Complex Fractions 2- Simplify

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(Negatives, Variables, & Exponents)

1)

10 20 30 40 ✓ LCD

$$\frac{\frac{3}{8}}{-\frac{7}{10}} = \frac{15}{-28}$$

4)

9 18 ✓ LCD

$$\frac{-\frac{5y}{9}}{-\frac{y}{6}} = \frac{-10y}{-3y} = \frac{10}{3} \text{ or } 3\frac{1}{3}$$

2)

12 LCD

$$\frac{\frac{x+7}{12}}{\frac{x-2}{3}} = \frac{x+7}{4x-8}$$

5)

$8a^3$ LCD

$$\frac{\frac{6a+5}{8a^2}}{\frac{a-3}{4a^3}} = \frac{6a^2+5a}{2a-6}$$

3)

15 30 ✓ LCD

$$\frac{\frac{1}{2}+\frac{7}{10}}{\frac{4}{15}+\frac{2}{5}} = \frac{15+21}{8+12} = \frac{36}{20} = \frac{9}{5} \text{ or } 1\frac{4}{5}$$

6)

$12r^2$ LCD

$$\frac{\frac{1}{r^2}-\frac{5}{12}}{\frac{5}{r}+\frac{1}{4}} = \frac{12-5r^2}{60r+3r^2}$$

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7)

$$\frac{12}{12}\cdot\frac{\frac{x}{6}+3}{\frac{x}{12}+3}$$

$\boxed{12 \text{ LCD}}$

$$\frac{\cancel{12}^{2}\cdot\frac{x}{\cancel{6}}+12\cdot 3}{\cancel{12}^{1}\cdot\frac{x}{\cancel{12}}+12\cdot 3}=\frac{2x+36}{x+36}$$

10)

$$\frac{y}{y}\cdot\frac{5-\frac{2}{y}}{3+\frac{7}{y}}$$

$\boxed{y \text{ LCD}}$

$$\frac{y\cdot 5-\cancel{y}\frac{2}{\cancel{y}}}{y\cdot 3+\cancel{y}\cdot\frac{7}{\cancel{y}}}=\frac{5y-2}{3y+7}$$

8)

$$\frac{x+2}{x+2}\cdot\frac{\frac{3}{x+2}+4}{\frac{7}{x+2}-1}$$

$\boxed{x+2 \text{ LCD}}$

$$\frac{\cancel{(x+2)}^{1}\cdot\frac{3}{\cancel{x+2}}+4(x+2)}{\cancel{(x+2)}^{1}\cdot\frac{7}{\cancel{x+2}}-1(x+2)}=\frac{3+4x+8}{7-x-2}=\frac{4x+11}{-x+5}$$

9)

$$\frac{3k-5}{3k-5}\cdot\frac{k+\frac{2}{3k-5}}{2-\frac{5}{3k-5}}$$

$\boxed{3k-5 \text{ LCD}}$

$$\frac{k(3k-5)+\frac{2\cdot 1\cancel{(3k-5)}}{\cancel{3k-5}}}{2(3k-5)-\frac{5\cdot 1\cancel{(3k-5)}}{\cancel{3k-5}}}=\frac{3k^2-5k+2}{6k-10-5}=$$

$$\frac{3k^2-5k+2}{6k-15}$$