

# Complex Fractions 2- Simplify (Negatives, Variables, & Exponents)

1)  $\frac{\frac{5}{4} \cdot \frac{3}{7}}{\frac{4}{1} \cdot \frac{3}{10}}$

~~40~~ ~~1~~ ~~5~~ ~~3~~ ~~40~~ ~~30~~ ~~30~~ ~~40~~ LCD

~~40~~ ~~4~~ ~~3~~ ~~7~~ ~~10~~ ~~28~~

4)  $\frac{\frac{2}{18} \cdot \frac{5y}{y}}{\frac{18}{3} \cdot \frac{10}{6}}$

~~18~~ ~~3~~ ~~2~~ ~~5y~~ ~~9~~ ~~-10y~~ ~~10~~ LCD

~~18~~ ~~3~~ ~~1~~ ~~y~~ ~~6~~ ~~-3y~~ ~~3~~

or  $3\frac{1}{3}$

2)  $\frac{\frac{x+7}{12}}{\frac{4}{x-2}}$

~~R~~ ~~x+7~~ ~~12~~ LCD

~~12~~ ~~4~~ ~~x-2~~ ~~3~~

$$\frac{1 \cdot x + 1 \cdot 7}{4 \cdot x - 4 \cdot 2} = \frac{x+7}{4x-8}$$

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

~~8a^3~~ ~~6a+5~~ ~~8a^2~~ LCD

~~8a^3~~ ~~a-3~~ ~~4a^3~~

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

3)  $\frac{\frac{1}{2} + \frac{7}{10}}{\frac{4}{15} + \frac{2}{5}}$

~~30~~ ~~1~~ ~~7~~ ~~30~~ ~~30~~ LCD

~~30~~ ~~4~~ ~~2~~ ~~15~~ ~~5~~

$\frac{9}{5}$  or  $1\frac{4}{5}$

$$\frac{\frac{1}{8} + \frac{7}{10}}{\frac{2}{15} + \frac{6}{5}} = \frac{15 + 21}{8 + 12} = \frac{36}{20} =$$

6)  $\frac{\frac{1}{r^2} - \frac{5}{12}}{\frac{5}{r} + \frac{1}{4}}$

~~12r^2~~ ~~1~~ ~~5~~ ~~12r^2~~ LCD

~~12r^2~~ ~~5~~ ~~r~~ ~~1~~ ~~4~~

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

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7)  $\frac{12}{12} \cdot \frac{x}{\frac{x}{12} + 3}$

**12 LCD**

$$\frac{12 \cdot x}{12} + \frac{12 \cdot 3}{x + 12} = \frac{2x + 36}{x + 36}$$

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

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

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

**x+2 LCD**

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

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

**3k-5 LCD**

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

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