ADD $\dfrac{5}{12} + \dfrac{7}{8} = \left(\dfrac{2}{2}\right)\left(\dfrac{5}{12}\right) + \left(\dfrac{3}{3}\right)\left(\dfrac{7}{8}\right) = \dfrac{10}{24} + \dfrac{21}{24} = \dfrac{31}{24}$

$2 \cdot 2 \cdot 3 \qquad 2 \cdot 2 \cdot 2$
$2^2 \cdot 3 \qquad 2^3 \qquad$ LCD $= 2^3 \cdot 3 = 24$

Find The LCD

1) $\dfrac{5}{9x^2y^7}$, $\dfrac{7}{3x^4y^2z}$

$\boxed{3^2 x^4 y^7 z}$

$3^2 x^2 y^7 \qquad 3^1 x^4 y^2 z$

2) $\dfrac{x+4}{5x-10}$, $\dfrac{3}{x^2-4x+4}$

$\boxed{5(x-2)^2}$

$5(x-2)$, $(x-2)^2$

Convert

$\dfrac{5}{4m^2} = \dfrac{?}{8m^5}$ LCD $= 8m^5$

Divide $\dfrac{8m^5}{4m^2} = 2m^3 \qquad \left(\dfrac{2m^3}{2m^3}\right)\left(\dfrac{5}{4m^2}\right) = \dfrac{10m^3}{8m^5}$

$\dfrac{t}{t+2} = \dfrac{?}{t^2+3t+2}$ LCD $= (t+2)(t+1)$

$\therefore (t+2)(t+1)$ Divide $\dfrac{(t+2)(t+1)}{(t+2)} = (t+1)$

$\dfrac{(t+1)}{(t+1)} \dfrac{t}{(t+2)} = \dfrac{t(t+1)}{(t+1)(t+2)} \dfrac{t^2+t}{t^2+3t+2}$

ADD $\dfrac{5}{11m} + \dfrac{3}{m^4} = \left(\dfrac{m^3}{m^3}\right)\left(\dfrac{5}{11m}\right) + \left(\dfrac{11}{11}\right)\left(\dfrac{3m}{m^4}\right) = \dfrac{5m^3}{11m^4} + \dfrac{33}{11m^4} = \boxed{\dfrac{5m^3+33}{11m^4}}$

LCD: $11m^4$

$\dfrac{11m^4}{11m} = m^3 \qquad \dfrac{11m^4}{m^4}$

ADD: $\dfrac{5}{y+3} + \dfrac{y^2+y+24}{y^2-9} = \dfrac{(y-3)}{(y-3)}\dfrac{5}{y+3} + \dfrac{y^2+y+24}{(y-3)(y+3)}$

$\boxed{\begin{array}{c}(y-3)(y+3)\\ \text{LCD: } (y-3)(y+3)\end{array}}$

$= \dfrac{5y-15}{(y+3)(y-3)} + \dfrac{y^2+y+24}{(y-3)(y+3)}$

$= \dfrac{y^2+6y+9}{(y+3)(y-3)} = \dfrac{(y+3)^2}{(y+3)(y-3)}$

$= \dfrac{y+3}{y-3} \; ; y \neq \{-3, 3\}$

Subtract:

$\dfrac{3}{m-2} - \dfrac{m}{m-5} = \dfrac{(m-5)}{(m-5)}\dfrac{3}{(m-2)} - \dfrac{(m-2)}{(m-2)}\dfrac{m}{(m-5)} = \dfrac{3m-15}{(m-5)(m-2)} - \dfrac{m^2-2m}{(m-5)(m-2)} =$

LCD: $(m-2)(m-5)$ $\quad\leftrightsquigarrow\quad$ $\dfrac{3m-15-m^2+2m}{(m-5)(m-2)} = \dfrac{-m^2+5m-15}{(m-5)(m-2)} =$

$= \dfrac{-1(m^2-5m+15)}{(m-5)(m-2)} = \boxed{-\dfrac{m^2-5m+15}{(m+5)(m-2)}}$

$\dfrac{t^2}{t-8} - \dfrac{-8t}{8-t} = \dfrac{t^2}{t-8} - \dfrac{(-1)(-8t)}{t-8} = \dfrac{t^2}{t-8} - \dfrac{8t}{t-8} = \dfrac{t^2-8t}{t-8} =$

$\curvearrowright \dfrac{t^2-8t}{t-8} = \dfrac{t(t-8)}{t-8} = t \; ; t \neq 8$