

6) Multiply or divide (as required) and simplify.

$$\begin{aligned} \text{a) } \frac{5x+5}{x-2} \cdot \frac{x^2-4x+4}{x^2-1} &= \frac{\cancel{5(x+1)}}{\cancel{x-2}} \cdot \frac{\cancel{(x-2)}(x-2)}{(x-1)\cancel{(x+1)}} \\ &= \frac{5(x-2)}{x-1} \end{aligned}$$

$$\begin{aligned} \text{b) } \frac{4y-12}{12} \div \frac{y-3}{3} &= \frac{4y-12}{12} \cdot \frac{3}{y-3} \\ &= \frac{\cancel{4(y-3)}}{\cancel{12}} \cdot \frac{\cancel{3}}{\cancel{y-3}} \\ &= \frac{4 \cdot 3}{12} = 1 \end{aligned}$$

$$\begin{aligned} \text{c) } \frac{c^2+4c}{c^2+3c-4} \div \frac{3c}{c-1} &= \frac{c^2+4c}{c^2+3c-4} \cdot \frac{c-1}{3c} \\ &= \frac{c(c+4)}{(c+4)(c-1)} \cdot \frac{\cancel{c-1}}{3c} \\ &= \frac{c}{3c} = \frac{1}{3} \end{aligned}$$

8) Find the LCM

a) 12, 20, 30

$$\begin{aligned} 12 &= 2 \cdot 2 \cdot 3 \\ 20 &= 2 \cdot 2 \cdot 5 \\ 30 &= 2 \cdot 3 \cdot 5 \end{aligned}$$

$$LCM = 2^2 \cdot 3 \cdot 5 = 60$$

b) $t-2$, $t+2$, t^2-4

$$t-2$$

$$t+2$$

$$t^2-4 = (t-2)(t+2)$$

$$LCM = (t-2)(t+2)$$