

March 8

## More Solve Rational Equations

Ex 1

$$\text{Solve: } \frac{5m}{(m+2)} + \frac{2}{m} = \frac{5}{1}$$

$$\text{LCD: } (m+2) \cdot m \rightarrow m(m+2)$$

$$\begin{array}{l} | m+2 = 0 \\ | \quad -2 \quad -2 \\ | \hline | m = -2 \end{array}$$

$$m = 0$$

$$\frac{5m \cdot m}{(m+2) \cdot m} \Rightarrow \frac{5m^2}{m(m+2)}$$

$$\frac{2(m+2)}{m(m+2)} \Rightarrow \frac{2m+4}{m(m+2)}$$

$$\frac{5 \cdot m(m+2)}{m(m+2)} \Rightarrow \frac{5m^2+10m}{m(m+2)}$$

$$\frac{5m^2}{m(m+2)} + \frac{(2m+4)}{m(m+2)} = \frac{5m^2+10m}{m(m+2)}$$

$$5m^2 + (2m+4) = 5m^2+10m$$

$$\begin{array}{r} 5m^2 + 2m + 4 = 5m^2 + 10m \\ \underline{-5m^2} \quad \underline{-5m^2} \end{array}$$

$$\begin{array}{r} 2m + 4 = 10m \\ \underline{-2m} \quad \underline{-2m} \end{array}$$

$$\frac{4}{8} = \frac{8m}{8}$$

$$\boxed{.5 = m}$$

Ex2 Solve:  $\frac{4}{v^2 - 8v + 12} = \frac{v}{v-2} + \frac{1}{v-6}$

$$\frac{4}{(v-6)(v-2)} = \frac{v}{v-2} + \frac{1}{v-6}$$

LCD:  $(v-6)(v-2)$

$$\frac{v(v-6)}{(v-2)(v-6)} \Rightarrow \frac{v^2 - 6v}{(v-6)(v-2)}$$

$$\frac{1(v-2)}{(v-6)(v-2)} \Rightarrow \frac{v-2}{(v-6)(v-2)}$$

$$\frac{4}{(v-6)(v-2)} = \frac{v^2 - 6v}{(v-6)(v-2)} + \frac{v-2}{(v-6)(v-2)}$$

$$4 = (v^2 - 6v) + (v-2)$$

$$4 = v^2 - 6v + v - 2$$

$$\begin{array}{r} 4 = v^2 - 5v - 2 \\ -4 \phantom{=} \phantom{=} -4 \\ \hline 0 = v^2 - 5v - 6 \end{array}$$

$$v = \cancel{1}, -1$$

$$\boxed{v = -1}$$

$$v^2 - 8v + 12$$

$$v^2 \cdot 12 = 12v^2$$

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$$-6v + -2v = -8v$$

$$\frac{v^2 - 6v}{v} \mid \frac{-2v + 12}{-2} \mid \frac{-2}{-2}$$

$$v(v-6) \mid -2(v-6)$$

$$(v-6)(v-2)$$

$$v-6=0$$

$$+6 +6$$

$$v=6$$

$$v-2=0$$

$$+2 +2$$

$$v=2$$