

Answer on Question #43351, Math, Algebra

Write this expression in terms of Z ?

$$X\{L+(LW/Z)^{p/p-1}\}^{-1/p} = ZX/1-p\{L+(LW/Z)^{p/p-1}\}^{-1/p-1} * LW^{p/p-1} * Z^{1-2p/p-1}$$

Answer.

$$X\left\{L + \left(\frac{LW}{Z}\right)^{\frac{p}{p-1}}\right\}^{-\frac{1}{p}} = \frac{ZX}{(1-p)} \left\{L + \left(\frac{LW}{Z}\right)^{\frac{p}{p-1}}\right\}^{-\frac{1}{p-1}} (LW)^{\frac{p}{p-1}} Z^{\frac{1-2p}{p-1}} \rightarrow$$

$$\left\{L + \left(\frac{LW}{Z}\right)^{\frac{p}{p-1}}\right\}^{\frac{1}{p(p-1)}} = \frac{(LW)^{\frac{p}{p-1}}}{1-p} Z^{-\frac{p}{p-1}} \rightarrow$$

$$L + \left(\frac{LW}{Z}\right)^{\frac{p}{p-1}} = \left(\frac{LW}{Z}\right)^{\frac{p}{p-1} * p(p-1)} \frac{1}{(1-p)^{p(p-1)}} \rightarrow$$

$$(LW)^{\frac{p}{p-1}} Z^{-\frac{p}{p-1}} - \frac{(LW)^{p^2}}{(1-p)^{p(p-1)}} Z^{-p^2} + L = 0.$$