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On fully invariant and verbal congruences. Preliminary report.

Let \mathcal{V} be a variety and \mathbf{A} an algebra of the same similarity type as \mathcal{V} . We define $\lambda_{\mathcal{V}}^{\mathbf{A}}$ to be the smallest congruence, θ , on \mathbf{A} such that $\mathbf{A}/\theta \in \mathcal{V}$. Congruences of this form are called *verbal*. A congruence θ on \mathbf{A} is called *fully invariant* if, for every endomorphism f on \mathbf{A} , $(a, b) \in \theta \implies (f(a), f(b)) \in \theta$.

Every verbal congruence is fully invariant. The converse fails in general. We shall discuss conditions on \mathcal{V} and on \mathbf{A} under which fully invariant congruences must be verbal. (Received November 24, 2009)