[12pt]article amsmath, amssymb, xcolor [margin=1in]geometry

Vector Space Proof Demonstration

Generated by the Khwarizmi Symbolic System

Goal: Prove that $(2 \cdot (u + 0) + -1 \cdot u) = u$.

Proof:

(2) $(u + 0) = u$	$[VS\_Add\_Id]$
(2a) $2 \cdot (u + 0) = 2 \cdot u$	$[VS\_Add\_Id]$
(2b) $(2 \cdot (u + 0) + -1 \cdot u) = (2 \cdot u + -1 \cdot u)$	$[VS\_Add\_Id]$
(3) $(2 \cdot u + -1 \cdot u) = (2 + -1) \cdot u$	$[VS\_Factor\_Scalar]$
(4) $(2 + -1) = 1$	$[Scalar\_Arith]$
(4a) $(2 + -1) \cdot u = 1 \cdot u$	$[Scalar\_Arith]$
(5) $1 \cdot u = u$	$[VS\_Scalar\_Id]$

Hence, $u = u$

Proof log automatically generated by Khwarizmi. All transformations follow registered axioms.