Properties of Vector Operations

Let $\vec{u}, \vec{v}$, and $\vec{w}$ be vectors in a plane. Let r and s be scalars.

i.	$\vec{u} + \vec{v} = \vec{v} + \vec{u}$	Commutative Property
ii.	$(\vec{u} + \vec{v}) + \vec{w} = \vec{u} + (\vec{v} + \vec{w})$	Associative Property
ii.	$\vec{u} + \vec{0} = \vec{u}$	Additive Identity Property
iv.	$\vec{u} + (-\vec{u}) = \vec{0}$	Additive Inverse Property
v.	$r(s\vec{u}) = (rs)\vec{u}$	Associativity of Scalar Multiplication
vi.	$(r + s)\vec{u} = r\vec{u} + s\vec{u}$	Distributive Property
vii.	$r(\vec{u} + \vec{v}) = r\vec{u} + r\vec{v}$	Distributive Property
viii.	$1\vec{u} = \vec{u}$	Identity Property
ix.	$0u = \vec{0}$	Zero Property