University of Toronto Scarborough Campus
Department of Computer and Mathematical Sciences

These solutions are not the only "perfect" or "10/10" solutions to be followed as a model. They are examples of ways to solve these problems. There are many many alternative ways to solve these problems. We hope that these example solutions help you check your work.

Problems

Q1. Recall, from the Week 10 Tutorial Activity, the definition of an equivalence relation.

Reflexive $A \sim A$

Symmetric $A \sim B \iff B \sim A$

Transitive $A \sim B$ and $B \sim C \implies A \sim C$.

Prove that the relation "V is isomorphic to W" is an equivalence relation on the class of vector spaces.

Solution:

Reflexive The identity map $I\colon V \to V$ is an isomorphism, so $V \cong V$.