University of Toronto Scarborough Campus
Department of Computer and Mathematical Sciences

Assignment Guidelines

This assignment was released on Monday March 14th at 13:00 and is due on Thursday March 24th at 13:00 .

We encourage you to talk to your TAs during tutorial, attend office hours, and ask professors for help with this assignment. You may use the textbook without citing it as a reference, however all other books and internet sources must be cited. Please submit your original work via Crowdmark.

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Problems

Q1. In this question, you will show that the set $\mathbb{R}^2$, equipped with operations:

$$(x_1, y_1) \oplus (x_2, y_2) = (x_1 + x_2 + 1, y_1 + y_2 - 1) \qquad \lambda \odot (x, y) = (\lambda x + \lambda - 1, \lambda y - \lambda + 1)$$

(a) Prove that Axioms A1-A5 from LAWA (p. 328) apply to $\oplus$.