CSCE/EE A241 Homework Assignment 4

Due Friday, February 4, 2022, at 11:59 PM

Please submit your solutions as an email attachment to [fwmoore@alaska.edu](mailto:fwmoore@alaska.edu). The graders will return your scores and comments via email next week.

Consider the following truth table:

W X Y Z F

0 0 0 0 0

0 0 0 1 0

0 0 1 0 0

0 0 1 1 0

0 1 0 0 1

0 1 0 1 1

0 1 1 0 0

0 1 1 1 1

1 0 0 0 1

1 0 0 1 1

1 0 1 0 0

1 0 1 1 1

1 1 0 0 1

1 1 0 1 1

1 1 1 0 0

1 1 1 1 1



* (4 pts.) Use a Karnaugh map to determine the minimal sum-of-products expression for F.

F = (XY') + (XZ) + (WY') + (WZ)

* (3 pts.) Use the same map to determine the minimal sum-of-products expression for F’.

F' = (W'X') + (YZ')

* (3 pts.) Use algebraic manipulation of your answer from part b to determine the minimal product-of-sums expression for F.

F = (W + X)(Y' + Z)