

Name: _____

Email: _____

Math Club: Biweekly Contest Week Six

Release Date: November 15, 2023

Instructions: Solve the following problem as best you can. The first student to submit the correct solution via email to tamumathcontest@gmail.com or to Jeremy Kubiak in Blocker 336D (with time stamp) wins!

Problem 1. Find the integer solution to the following equation which maximizes abc ,

$$abc - 9ab - 16bc - 16ca + 144a + 144b + 256c = 2312.$$

Give both the solution (a, b, c) and the corresponding value of abc .

Hint. If $a + b + c = n$ then can you find an upper bound for abc in terms of n ? How can you use this to prove your solution maximizes abc ?