**P1.** Grandma Mildred’s Fabulous Metallic Products, LLC, produces a steel-uranium alloy that is then used to make guitar strings for melodic death metal bands. Their expected profit can be approximated by

\[ P(s, u) = -s^3 - 27u^3 + 108su \]

where \( s \) is the amount of steel and \( u \) is the amount of uranium used in production. Find the combination of steel and uranium that maximizes the expected profit, and compute what that profit is.

**P2.** You just got a job working for Giant Fish Tanks for Aquariums Incorporated, a company which constructs giant fish tanks for aquariums. Your boss wants you to determine the least amount of money that can be spent to construct a rectangular manatee aquarium, open on top, with a volume of 343 square meters. Glass costs $35 per square meter. What is the minimum cost? *Hint: Find the dimensions that will minimize the surface area (and hence the cost of glass).*