QUIZ 5 - MATH 152   Friday, October 6

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Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [6 points] Use the substitution method to discover whether the following improper integral converges or diverges. If it converges, find its value.

$$\int_2^3 \frac{x^2}{\sqrt{x^3 - 8}} dx.$$

(Please show carefully all steps.)

2. [6 points] Find the surface area of the solid resulting by rotating the graph of the function $f(x) = x^3$ over $[0, 1]$ around the x-axis.