Directions: Complete all of the following to the best of your ability. If you do not understand a question, please let me know; I may be able to assist you. Show all work, unless directed otherwise. You will usually be graded primarily on the method you use, not your final answer. GOOD LUCK!

1. (6) Perform one technique of integration to make the following integral “better” (one step closer to being solvable). Then write sentences describing the rest of the evaluation process. \[ \int \frac{\sqrt{x}}{x-1} \, dx \]

2. (4) Use a Taylor Polynomial at \( a = 0 \) to find the limit. \[ \lim_{x \to 0} \frac{3x - 3 \sin x}{x^3} \]