

Name:

1. (3pts) Is the integral $\int_3^{+\infty} \frac{1}{\sqrt[5]{t}} dt$ convergent?

2. (3pts) Is the integral $\int_{-\infty}^{+\infty} \frac{x^3}{1+x^{10}} dx$ divergent or convergent. Justify the answer.

3. (4pts) Find the arclength of the curve:

$$y = \frac{x^5}{10} + \frac{1}{6x^3}, \quad 1 \leq x \leq 2$$