Worksheet 5

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I. Determine whether each integral is convergent or divergent.

1. $\displaystyle\int_0^3 \frac{1}{x^2-6x+5}dx.$
2. $\displaystyle\int_{-\infty}^{\infty} \frac{1}{4x^2+4x+5}dx.$
3. $\displaystyle\int_0^{\infty} (t^5-4t+12)e^{-\sqrt[3]{t}}dt.$
4. $\displaystyle\int_{-\infty}^{\infty} \ln|x|e^{-x^2}dx.$
5. $\displaystyle\int_0^1 \frac{\ln(1-x)}{x}dx.$

II. Find the length of the curve $y^2=4(x+4)^3$, $0\leq x\leq 2$, $y>0$.