No.

Date

ALDEN LUTHFI
2206028932

(12.) $\lim_{x \to \infty} \frac{x^3}{e^{x^2}}$

$\overset{L}{=} \lim_{x \to \infty} \frac{3x^2}{2xe^{x^2}} \overset{L}{=} \lim_{x \to \infty} \frac{6x}{2e^{x^2} + 4x^2 e^{x^2}}$

$\overset{L}{=} \lim_{x \to \infty} \frac{6}{4xe^{x^2} + 8xe^{x^2} + 8x^3 e^{x^2}} = 0$

(18.) $\int_0^3 \frac{1}{(x-5)(x-1)} = \int_0^3 \frac{1}{4(x-5)} - \frac{1}{4(x-1)}$

$= \int_0^1 \frac{1}{4(x-5)} - \frac{1}{4(x-1)} + \int_1^3 \frac{1}{4(x-5)} - \frac{1}{4(x-1)}$

$= \lim_{a \to 1^-} \int_0^a \frac{1}{4}\left(\frac{1}{(x-5)} - \frac{1}{(x-1)}\right) + \lim_{a \to 1^+} \int_a^3 \frac{1}{4}\left(\frac{1}{(x-5)} - \frac{1}{(x-1)}\right)$

$= \lim_{a \to 1^-} \frac{1}{4}(\ln|a-5| - \ln|a-1| - \ln|-5| + 0)$

$= \infty$, maka divergen