MAP 2302 - Quiz #3   **Name:**
_____

For full credit, you must <u>show all work</u> and <u>circle</u> your final answer.

☐ 1   *(2.5 point)* Write the following piecewise function in terms of step and window functions then find the Laplace transform

$$f(t) = \begin{cases} \cos(t) & 0 < t < 2\pi \\ t & 2\pi < t < 8 \\ t^2 & t > 8 \end{cases}$$

2   (a) *(1.5 points)* Find the power series expansion of $f + g$ in the form $\sum a_n x^n$ given

$$f = \sum_{n=3}^{\infty} \frac{2^n}{n!} x^{n-2}, \quad g(x) = \sum_{n=1}^{\infty} \frac{n^2}{2^n} x^{n-1}$$

(b) *(1.5 points)* Find the power series expansion of $g'(x)$ in the form $\sum a_n x^n$.

University of Florida Honor Code:

On my honor, I have neither given nor received unauthorized aid in doing this assignment.

_____
Signature