In each of Problems 13 through 18:
(a) Sketch the graph of the given function for three periods.
(b) Find the Fourier series for the given function.

18. \( f(x) = \begin{cases} 
0, & -2 \leq x \leq -1, \\
x, & -1 < x < 1, \\
0, & 1 \leq x < 2; 
\end{cases} \) \( f(x + 4) = f(x) \)

In each of Problems 19 through 24:
(a) Sketch the graph of the given function for three periods.
(b) Find the Fourier series for the given function.

22. \( f(x) = \begin{cases} 
x + 2, & -2 \leq x < 0, \\
2 - 2x, & 0 \leq x < 2; 
\end{cases} \) \( f(x + 4) = f(x) \)

In each of Problems 23 through 26:
(a) Find the required Fourier series for the given function.
(b) Sketch the graph of the function to which the series converges for three periods.

23. \( f(x) = \begin{cases} 
x, & 0 < x < \pi, \\
0, & \pi < x < 2\pi; 
\end{cases} \) cosine series,

24. \( f(x) = -x, \quad -\pi < x < 0; \) sine series,

25. \( f(x) = 2 - x^2, \quad 0 < x < 2; \) sine series,

26. \( f(x) = x^2 - 2x, \quad 0 < x < 4; \) cosine series,

The homework is due Wed. April 3 in Class at Class Time

Note: This is the Last Homework. Some suggested problems (with answers) will be posted later.