

Turn in starred problems Tuesday 11/10/2009.

Section 17.3: 4 (g), 16 (b)*

Section 17.4: 1 (b), 2 (c)* (d)* (see comment 1 below!)

Section 18.3: 6 (c), (h), (n) (See comments 2 and 3 below).

9.A* Do problem 18.3.6(e) but change the boundary conditions to $u(0, t) = u_x(4, t) = 0$. Keep the same initial condition $f(x) = 25$.

9.B* (a) Let $F(t) = |t|$ on $(-2\pi, 2\pi]$. Note that we studied this function on Assignment 8, Problem 17.3.4(b); you can use the solution to that problem without recomputing it (see the posted solution). Solve problem 17.3:18 for this function $F(t)$.

Comments, hints, instructions:

1. For 17.4:2(c), do only the part of the problem requiring the sketches; you are *not* required to compute the series for (c). For 17.4:2(d) do the entire problem.
2. Section 18.3: We have not covered all of this section, but in lecture Tuesday 11/3 we discussed using Fourier series in solving the one-dimensional diffusion equation on an finite interval with homogeneous boundary conditions. The parts of 18.3:6 assigned (including 9.A) are of this type. In approaching such a problem you must first decide what sort of series to use: half range? quarter range? sine? cosine?
3. Section 18.3: For the parts of problem 18.3:6 assigned (including 9.A) you do *not* have to find the steady state solution, since we have not yet discussed this.