PROBLEM:

This is a direct continuation of Problem 5.4*. Use your results from Problem 5.4(a) and (b) in this problem. The following MATLAB commands are used to make an output sound:

```
xn = makedcos(pi*[0,0.25,0.75,1.75],[1,1−1i,−7i,2i],200001)
soundsc(xn,8000)
```

Since we can listen to the sound produced by the soundsc() function, we can regard the soundsc() function as a D-to-C converter whose input is xn, and whose output is the analog signal that we hear.

(a) Draw a plot of the (idealized) continuous-time spectrum (vs. f in Hz) of the continuous-time signal that would be created at the output of an ideal D-to-C converter (approximately realized by the soundsc() function).

(b) Write an equation for $x(t)$, the continuous-time signal that is created at the output of the ideal D-to-C converter.

(c) What is the duration (in seconds) of the continuous-time signal $x(t)$?