Fourier Analysis

Assignment 8

20181108

Name : _____

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1. Evaluate the Laplace transform of the given functions.
   (a) $f(t) = u(t-1) - t + 1$
   (b) $f(t) = e^{2t}u(t-2)$
   (c) $f(t) = u(t-\pi)\sin t$
2. For the given function, (1) plot the given function, (2) Express it using unit step functions, (3) Evaluate its Laplace transform.
   (a) $f(x) = \begin{cases} 2, & \text{if } 2 \le t \le 3 \\ 0, & \text{otherwise} \end{cases}$
   (b) $f(x) = \begin{cases} t-1, & \text{if } 1 \le t \le 2 \\ 0, & \text{otherwise} \end{cases}$
3. Evaluate the inverse Laplace transform of the given function.
   $F(s) = \frac{e^{-s}}{s^2}$
   Hint : Theorem 1 in Section 8.2 of the textbook.

Reading Materials : Section 8.2 of the textbook.