CENG 384 - Signals and Systems for Computer Engineers
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Homework 3

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1.

2. (a) $x(t)x(t) \leftrightarrow a_k * a_k$ (Multiplication Property)

   (b) $\mathcal{E}v\{x(t)\} \leftrightarrow b_k$ (Even Property)

   $$b_k = \begin{cases} a_k & k \geq 0 \\ a_{-k} & k < 0 \end{cases}$$

   (c) $x(t+t_0) + x(t-t_0) \leftrightarrow a_k e^{jkw_0t_0} + a_{-k}e^{-jkw_0t_0}$ (Shifting and Linearity Properties)

3.

4. (a)

   (b)

   (c)

   (d)

5. (a)

   (b)

   (c)

   (d)

6. (a)

   (b)

7. (a)

   (b)

8.