Chapter 11, Solution 25.

Find the rms value of the signal shown in Fig. 11.56.
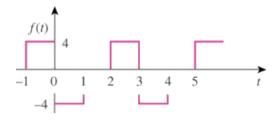

Figure 11.56
For Prob. 11.25.

Solution

$$f_{rms}^2 = \frac{1}{T}\int_0^T f^2(t)dt = \frac{1}{3}\left[\int_0^1(-4)^2\,dt + \int_1^2 0\,dt + \int_2^3 4^2\,dt\right]$$

$$= \frac{1}{3}[16 + 0 + 16] = \frac{32}{3}$$

$$f_{rms} = \sqrt{\frac{32}{3}} = \underline{3.266}$$

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