

Problem 1.16

Figure 1.27 shows the current through and the voltage across an element.

- Sketch the power delivered to the element for $t > 0$.
- Find the total energy absorbed by the element for the period of $0 < t < 4$ s.

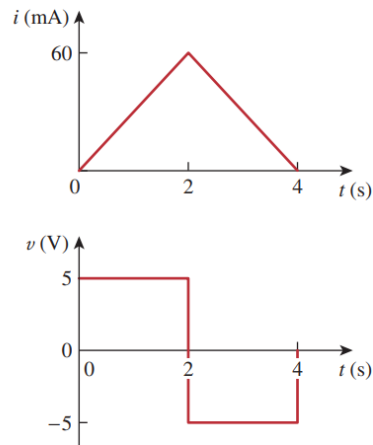
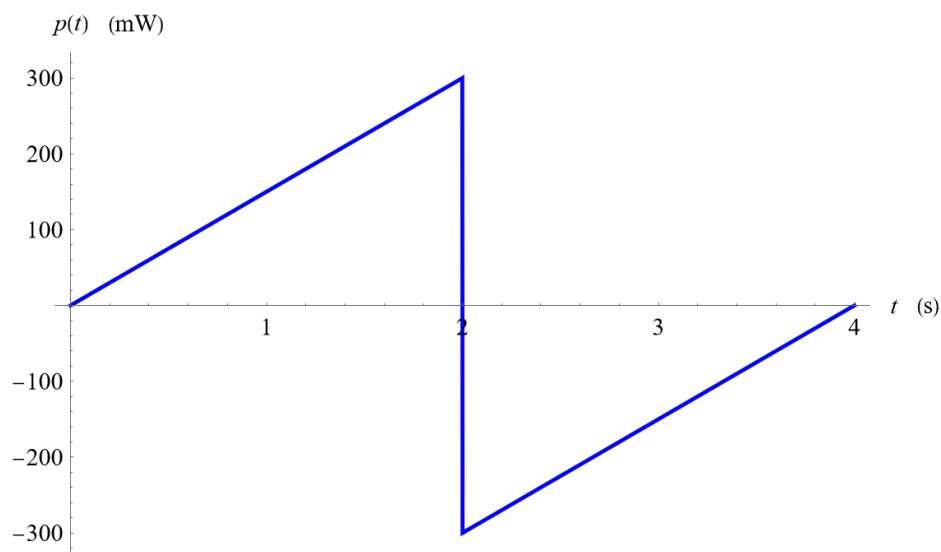


Figure 1.27
For Prob. 1.16.

[TYPO: Spell this as “find.”]

Solution

Power is the product of voltage and current: $p(t) = v(t)i(t)$.



The total energy absorbed from $0 < t < 4$ s is the integral of the power with respect to time over this interval.

$$W = \int_0^4 p(t) dt = 0$$