Teacher Answer Key

Case Study

1. The professional sequence is to reduce demand before generating supply, meaning seal and insulate first so the house needs less energy. The reading warns that installing panels on a leaky, poorly insulated house means paying to generate energy that immediately escapes, so ninety-one dollars of sealing returned more than panels would have.

2. They were locating air leaks, since moving smoke reveals air blowing through gaps at attic hatches, window frames, and outlets. Air sealing is a separate problem from insulation because insulation only slows heat moving through materials, while sealing stops air from passing through openings entirely.

Multiple Choice

1. B

2. B

3. D

Matching

1-D, 2-C, 3-B, 4-E, 5-A

Fill-in-the-Blank

1) R-value, 2) EnergyGuide, 3) 120

Short Answer (Sample Responses)

Q1: The cheapest unit of energy is the one a household never needs to use, so reducing demand comes before generating supply. Panels installed on a leaky, poorly insulated house pay to produce energy that escapes through the attic, which wastes the investment that sealing and insulation would have protected.

Q2: Modern homes are sealed far tighter than older ones, which saves energy but also traps whatever is released inside. VOCs off-gassing from paints, adhesives, carpets, and pressed-wood furniture accumulate rather than dispersing, so ventilation and low-VOC materials matter more than they once did.

Q3: Utility costs reveal how the building actually performs, which rent alone does not disclose, and a poorly insulated unit can cost far more monthly than its rent suggests. The reading notes it is a legitimate question that few applicants think to ask, so it gives a renter information others skip.