Teacher Answer Key

Case Study

1. Electrical work in older buildings requires diagnosing unpredictable conditions — nonstandard wiring, hidden structural barriers, and unique building layouts that no algorithm can anticipate. It also requires manual dexterity, physical problem-solving, and adapting in real time to what you find inside a wall or panel. These are exactly the characteristics the reading identifies as most resistant to automation.

2. Kezia could use drone survey data to understand the layout and condition of a job site before beginning electrical work, and BIM models could show her where conduit, wiring, and panels are planned relative to other building systems. Even without programming these tools herself, she would use the output they produce to plan her work more efficiently and avoid conflicts with other contractors.

Multiple Choice

1. B

2. A

3. A

Matching

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

Fill-in-the-Blank

1) 80,000, 2) safety, 3) adaptive

Short Answer (Sample Responses)

Q1: AI tools make tradespeople more productive by handling surveys, design optimization, and scheduling, while the tradesperson brings the irreplaceable physical skill and judgment. A tradesperson with both deep technical mastery and comfort with AI tools can do the work of a larger team and command premium wages — the combination is more valuable than either element alone.

Q2: An apprentice earns wages while training and finishes with no student debt, because apprenticeship programs pay workers while they learn. A student who spends those same years in a four-year degree program is paying tuition rather than earning during them. With experienced master electricians earning well over $100,000, the lifetime financial advantage of the apprenticeship path can be substantial.

Q3: The robot handles only straight, uniform walls under controlled conditions and requires human workers for setup, supervision, and adjustment. Real construction involves irregular shapes, corners, special materials, and conditions that change constantly — everything outside the robot's narrow capability still requires human skill.