## Teacher Answer Key

**Case Study**

1. LiDAR allows discovery of entire cities from remote locations without fieldwork, dramatically expanding the area that can be surveyed. The advantage is speed and scale; the limitation is that Marcello knows the shapes of structures but nothing about when they were built, who used them, or what they contain — all of which require excavation.

2. Archaeologists would need to visit the site, map it on the ground, excavate test trenches to recover ceramics for dating, analyze skeletal remains, and read any inscriptions — all of which take years. The LiDAR map identifies what exists but cannot tell us who, when, or why.

**Multiple Choice**

1. B

2. D

3. C

**Matching**

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

**Fill-in-the-Blank**

1) 61,000, 2) 10, 3) sacbeob

**Short Answer (Sample Responses)**

Q1: The survey found 61,000+ previously unknown structures in an area that had been studied for decades, requiring population estimates to be revised to 10-15 million or more. The discovery of massive defensive walls and causeways was particularly surprising, showing that Maya warfare and connectivity were far more developed than previously believed.

Q2: Causeways connecting cities show deliberate infrastructure investment in inter-city movement, suggesting the Maya world was a networked system of trade, communication, and military coordination rather than isolated competing city-states. The scale of road engineering implies political relationships beyond simple raiding and warfare.

Q3: If one survey of 2,100 square kilometers found 61,000 unknown structures, similar surveys across the Amazon, Southeast Asia, and Africa may reveal civilizations of comparable scale and complexity that have been entirely invisible to

archaeology. This suggests current understanding of ancient world population and urbanization may be dramatically underestimating human history in forested regions.