Teacher Answer Key

Case Study

1. Learning means changing behavior based on experience — genuinely updating an internal model. Adapting here means following pre-programmed conditional logic: a flag was set after the first distraction, and that flag triggered a different pre-written behavior. The guard didn't learn; it followed a different branch of its existing decision tree. The distinction matters because we can be fooled into thinking AI is more sophisticated than it is, which affects how we understand and regulate real AI systems.

2. Answers will vary. Students who think it matters might argue that genuine learning implies a system that can generalize to new situations, while illusion-based AI can only handle scenarios its designers anticipated. Students who think it doesn't matter might focus on outcomes — if the behavior is indistinguishable, does the mechanism matter? Both positions should engage with the broader question of what 'intelligence' actually means.

Multiple Choice

1. A

2. D

3. D

Matching

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

Fill-in-the-Blank

1) No Man's, 2) AlphaGo, 3) robotics

Short Answer (Sample Responses)

Q1: Procedural generation uses algorithms to automatically create game content without hand-designing it. In No Man's Sky, this produced 18 quintillion unique planets — each with distinct terrain, weather, and life — that no human team could have built manually. It reduces development cost while dramatically increasing the variety and replayability of the game world.

Q2: Game AI is designed to make characters appear intelligent and behave in ways that are fun and challenging for players — it does not need to actually think or generalize to new situations. Broader AI development (like at Google or Anthropic)

aims for systems that can reason, generalize, and handle novel inputs. Game AI prioritizes the illusion of intelligence; research AI pursues the real thing.

Q3: The reading directly states that reinforcement learning — trained to superhuman performance in Go and chess by DeepMind — is now used in robotics and LLM fine-tuning. This is a concrete, verifiable example of a game technique migrating into real-world applications. Procedural generation similarly has applications in drug discovery and architecture. The pattern is well-documented, making the argument convincing.