Interactive Knowledge Checkpoints

Knowledge Check: Part 1

Innovation Discovery Foundation

1 of 3 Parts Complete

Q1: What is the main goal of clustering in innovation?

- ○ A) To reduce data size
- ☐ B) To discover hidden patterns
- ○ C) To predict outcomes
- ○ D) To clean data

Q2: Which metric measures cluster cohesion?

- ○ A) Accuracy
- ○ B) Precision
- ☐ C) Silhouette Score
- ○ D) F1 Score

Q3: Empathy mapping helps identify:

- ○ A) Technical requirements
- ☐ B) User pain points
- ○ C) System architecture
- ○ D) Database schema

Knowledge Check: Part 2

Clustering Algorithms Deep Dive

2 of 3 Parts Complete

Q1: K-means time complexity is:

- ○ A) O(n)
- ○ B) O(n log n)
- ☐ C) O(n*k*i*d)
- ○ D) O(n²)

Q2: DBSCAN is best for:

- ○ A) Spherical clusters
- ☐ B) Arbitrary shapes
- ○ C) Fixed K clusters
- ○ D) Linear data

Q3: GMM provides:

- ○ A) Hard clustering
- ☐ B) Soft clustering
- ○ C) No clustering
- ○ D) Random clustering

Knowledge Check: Part 3

Human-Centered Application

3 of 3 Parts Complete!

Q1: User archetypes are created from:

- ○ A) Random assignment
- ☐ B) Cluster analysis
- ○ C) Manual labeling
- ○ D) Predictions

Q2: Innovation opportunities emerge from:

- ○ A) Cluster gaps
- ○ B) Dense regions
- ○ C) Outliers
- ☐ D) All of above

Q3: Validation should include:

- ○ A) Only metrics
- ☐ B) Domain experts
- ○ C) Random checks
- ○ D) Code review

Key Concepts Covered:

- Unsupervised learning
- Pattern discovery
- User segmentation
- Innovation opportunities

Algorithm Quick Reference:

Algorithm	Best For	Weakness
K-means	Speed	Assumes spherical
DBSCAN	Shapes	Parameter sensitive
GMM	Overlap	Computationally heavy

Ready for Practice!

You now have the knowledge to:

1. Choose algorithms 2. Apply clustering 3. Extract insights

Green checkmarks indicate correct answers | Use these to review key concepts