

Exercise Comparison Paradigms

**** ANSWERS ****

Test your understanding and knowledge in groups or pairs.

Help each other to complete this exercise.

Try to remember, fill in the blank cells of this table.

Feature	Supervised Learning	Unsupervised Learning	Reinforcement Learning
Type of data used	Labelled data	Unlabelled data	Data from interaction with an environment
Are correct answers provided?	Yes – the correct output is known	No – the system is not given answers	No fixed answers, only feedback
How learning happens	Model compares predictions to correct answers and reduces errors	Model looks for patterns, similarities, or groups	Agent learns through trial and error
Main goal	Make accurate predictions or classifications	Discover hidden patterns or structure	Maximise rewards over time
Type of feedback	Error-based feedback	No direct feedback	Rewards and penalties
Typical outputs	Labels, scores, predictions	Groups, clusters, associations	Actions or decisions
Common uses	Spam detection, image recognition, price prediction	Customer grouping, anomaly detection	Games, robotics, traffic control
Strengths	High accuracy when good data is available	Useful for exploring unknown data	Effective in dynamic environments
Limitations	Requires large amounts of labelled data	Results may be harder to interpret	Can take a long time to train
Key revision phrase	Learns from labelled examples	Finds patterns without labels	Learns through rewards and penalties