# Your grade: 100%

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1. What sets deep learning apart from traditional programming approaches? 1 / 1 point

- ○ Deep learning processes numerical data faster than traditional programming can handle.
- ○ Deep learning relies on humans to write explicit rules for every situation.
- ○ Deep learning writes code automatically, eliminating the need for programmers to create any algorithms.
- ◉ Deep learning automatically learns patterns and relationships from examples.

**Correct**
Yes. Deep learning learns directly from data rather than hand-written rules.

2. What does "inference" mean in deep learning? 1 / 1 point

- ○ Collecting and preprocessing data before model training.
- ○ Training the neural network with labeled data.
- ◉ Using a trained model to make predictions on new, unseen data.
- ○ Adjusting model parameters to improve accuracy.

**Correct**
Yes. Inference means predicting with a trained model.

3. Which of these steps would **NOT** typically be part of data preparation (preprocessing)? 1 / 1 point

- ○ Removing duplicate or impossible entries from the data.
- ○ Converting addresses into distance measurements.
- ○ Handling missing values and errors.
- ◉ Optimizing a neural network architecture.

**Correct**
Yes. This is part of model design, not preprocessing.

4. In a neural network, what do the weight and bias parameters control? 1 / 1 point

- ◉ How the neuron transforms its input into an output.
- ○ How the training data is split into batches.
- ○ How fast the model trains on the data.
- ○ How many layers the neural network will have.

**Correct**
Yes. The weight and bias define the neuron's equation (output = weight × input + bias). Different values create different transformations—like different lines through your data points.

5. What was a major limitation of early deep learning frameworks that PyTorch addressed? 1 / 1 point

- ◉ Early frameworks required defining the entire model structure upfront.
- ○ Early frameworks could only train models on small datasets.
- ○ Early frameworks were only available to researchers at large institutions.
- ○ Early frameworks couldn't handle neural networks with multiple layers.

**Correct**
Yes. Early frameworks used static computational graphs—like a fixed assembly line. PyTorch lets you write normal Python code with standard if-statements, loops, and debugging.