1. What are the requirements for independent and dependent variables in regression?

- Independent and dependent variables can be either categorical or continuous.

-Independent variables must be continuous. Dependent variables can be either categorical or continuous.

- Independent variables can be either categorical or continuous. Dependent variables must be continuous.

-Independent and dependent variables must be continuous.

2. The key difference between simple and multiple regression is:

-Simple regression assumes a linear relationship between variables, whereas this assumption is not

necessary for multiple regression.

﻿﻿-Multiple linear regression introduces polynomial features.

﻿﻿-To estimate a single dependent variable, simple regression uses one independent variable whereas multiple regression uses multiple.

﻿﻿-Simple linear regression compresses multidimensional space into one dimension.

3. Recall that we tried to predict CO2 emission with car information. Say that now we can describe the relationship

as: CO2\_emission = 130 - 2.4\* cylinders + 8.3\*fuel consumption

What is TRUE of this relationship?

- When "cylinders" decreases by 1 while fuel\_ consumption remains constant, CO2\_emission increases by 2.4 units.

- When "cylinders" increases by 1 while fuel consumption remains constant, CO2\_emission increases by 2.4

units.

- Since the coefficient for "fuel\_consumption" is greater than that for "cylinders", "fuel consumption" has higher impact on CO2 \_ emission.

-When both "cylinders" and "fuel \_consumption" increase by 1 unit, C02\_emission decreases.

4. What could be the cause of a model yielding high training accuracy and low out-of-sample accuracy?

﻿﻿The model is training on the entire dataset, so it is overfitting.

﻿﻿The model is training on a small training set, so it is underfitting.

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5. Multiple Linear Regression is appropriate for:

﻿﻿Predicting tomorrow's rainfall amount based on the wind speed and temperature.

﻿﻿Predicting the sales amount based on month.

﻿﻿Predicting whether a drug is effective for a patient based on her characteristics.