1.

**Evaluation Metric**:

A way to quantify performance of a machine learning model. Basically a number that tells you, if it's a good model and you can use this number to compare oher different models.

2.

**Classification**:

Classification accuracy

Precision

Recall

F1 score

ROC/AUC

Precision/Recall AUC

Matthews correlation coefficient

Log loss

**Regression**:

R2

MAE

MSE

RMSE

RMSLE

3.

MCC: Matthews correlation coefficient, takes into account all four confusion matrix categories.

MCC = ((TP\*TN)-(FP\*FN))/sqrt((TP+FP)(TP+FN)(TN+FP)(TN+FN))

**Characteristic**:

MCC score does not depend on any of the parameters such as TP, FP, TN, FN. It is not sensitive to any of them. To be precise, F1 score is sensitive to which class is positive and which class is negative. But MCC isn't. It doesn't work well for multi class problem

4.

Linear/ Logistic Regression

Decision Tree or Random Forest

Gradient Boosting Machines (xgboost, lightgbm, etc)

Convolutional Neural Networks

These algorithms are simple to understand are being implemented in our daily life scenarios most commonly. Not only because of popularity, but also they related with one another. They belong to supervised machine learning

5.

**Linear regression**:

This machine learning algorithm is the easiest one to understand. Also used in statistics, linear regression combines two variables. Where one is considered an independent variable and the other is a dependent one.

**The algorithm can be used**:

To do predictive analytics

To do sales forecasting

To discover trends

To see how office temperature impacts overall productivity

To see how business availability impacts sales

To see how food consumption impacts health

To see how investment in marketing pays off

6.

**Interpretable model types**:

Linear models

Decision trees

Rule-based models

Naive Bayes

k-nearest neighbors

Interactive models

Bayesian Networks

Generally, some models belong to the hypothesis space 1. As these interpretable

models provide interpretability by themselves and, thus, can be considered “interpretable

by nature”. The models are understood in their entirety by the model’s target group.

7.

The two questions posed to data scientists about training a model are "What are we actually looking for?", "Do we really need a black box model?"

Also, It describes the explosion of research in the field of explainable ML with surrogate models regarding high stakes decisions as problematic. They state that building interpretable models that are accurate as black boxes should be considered. Therefore, more research in the field where a black box and an interpretable model are competing against each other was needed.