Question 4:

4a) check the parametrs max_features and max_depth are the strategies we need to implement for pre_prune or post_prune.

4b)

Max_features

```
If
isinstance(self.max_features,str):
                    if self.max_features == "auto":
                        if is_classification:
                            max_features = max(1,
int(np.sqrt(self.n_features_in_)))
                        else:
                            max_features = self.n_features_in_
                    elif self.max_features == "log2":
                        max_features = max(1,
int(np.log2(self.n_features_in_)))
                    else:
                        raise ValueError(
                            "Invalid value for max_features. "
                            "Allowed string values are 'auto', "
                            "'sqrt' or 'log2'."
                        )
                elif self.max_features is None:
                    max_features = self.n_features_in_
                elif isinstance(self.max_features, numbers.Integral):
                    max_features = self.max_features
                else:  # float
                    if self.max_features > 0.0:
                        max_features = max(1, int(self.max_features *
self.n_features_in_))
                    else:
                        max_features = 0
```

Max_depth:

int,default=None

The maximum depth of the tree. If None, then nodes are expanded until all leaves are pure or until all leaves contain less than min_samples_split samples.

- By checking the depth of the tree we can see whether the tree is fully grown and also we can

```
if
max_depth<=0:
                raise ValueError("max_depth must be greater than zero. ")
```