Computing Gini Index

Step 1.8.3 asks you to compute Gini index for the leaf node with 46 flowers.

As mentioned in our lecture, Gini Index is the sum of the squares of the proportions of all the classes.
If this leaf node has 16, 20, and 10 flowers from the three different species (classes), respectively, then you can first determine the proportion of each class in this leaf node.

- (16/46)
- (20/46)
- (10/46)

Next, you take the square of each of them

- (16/46)^2
- (20/46)^2
- (10/46)^2

Finally, you take the sum of the three squared proportions.

(16/46)^2 + (20/46)^2 + (10/46)^2 = 0.357.

This is the Gini index for this leaf node.

Based on the Gini index from all the leaf nodes at the same level, you can compute the impact split, as shown on Slide 36.