Post Analysis:

Feature Name	Information Gain	Metric Type	Inference
num_clauses_walksat	**0.192**	Instance Size	The single most important predictor is the total number of clauses.
num_clauses_dpll	**0.189**	Instance Size	Identical to the above, confirming the importance of clause count.
ratio_walksat	**0.118**	Instance Structure	The Clause-to-Literal Ratio (L/N) is clearly an important differentiating factor.
clause_density_dpll	**0.110**	Instance Structure	The Clause Density (L/N^2) is another critical structural metric.
ratio_dpll	**0.102**	Instance Structure	The DPLL version of the Clause-to-Literal Ratio.

Other feature attributes either contribute minimally, or do not contribute at all.

Train-Test Split used : 70:30

The most significant inference is the class imbalance in the model:

- Actual Imbalance: Out of 1220 instances, 1206 (98.85%) are solved better(faster) by DPLL (Class 0), while only 13 (1.15%) are better solved by WalkSAT (Class 1).

Model Accuracy: 0.932
Precision : 0.88

WalkSAT Precision (0.88)
Implying, when the model predicts WalkSAT, it's correct only 88% of the time. Error rate : 12%.

False Positives (DPLL instances misclassified as WalkSAT) is approximately 266 - 234 = 32 instances.

The model is still misclassifying 32 instances where DPLL was better as instances where WalkSAT should be chosen.