(5) Proof: by induction on size of $S$.

Proof of Corollary.
Suppose a vertex $v$. Claim

$v \in \mathcal{C}_-$ and $\mathcal{C}_- \subseteq \mathcal{C}_1$. In this case,

every vertex in $\mathcal{C}_-$ is adjacent to $v$ and

$v$ is not in the vertex set of $[\mathcal{C}_-]$. Consequently,

$v$ is not in the vertex set of $[\mathcal{C}_1]$. Therefore,

$v$ is not in the vertex set of $[\mathcal{C}_1]$.
Huffman's Alg.

Input: Given frequency \( P_a \), Alphabet \( \Sigma \)

Output: Binary tree with minimum average encoding length.

(1) If \( |\Sigma| = 1 \)
   
   return.

(2) Let \( \Sigma' = \Sigma \) with character \( a, b \) replaced with \( ab \)

   Define \( P_{ab} = (P_a + P_b) \)

   recursively compute \( T' \) for \( \Sigma' \)
Basic case: Need to find $\forall x \in \mathbb{R}$, you can do $x = \sqrt{2}$.

Proof: Say contradiction on length of $\sqrt{2}$.

Minimize the average encoding length.

Theorem: Huffman's algorithm computes a unique

Correctness Proof

Let $p_s \not= p_t$ be two symbols.
Now we have shown the following:

\[ p + p = p + p \]

Hence, replace by much smaller \( a, b \).

Let \( x \leq 2 \) with \( a, b \) (symmetry with smaller)

**Inductive Step:**
\[
\text{let us find the missing angles of } \angle 5 \text{ as follows: }
\]

\[
\begin{align*}
\angle 5 &= \angle 1 + \angle 2 \\
\angle 5 &= \angle 1 + \angle 3 + \angle 4
\end{align*}
\]
Let $T^*$ be an optimal tree. (1≤j≤k)

Now we will show that shrinking with this optimal is the same as the one independent of the tree height of the tree.
\[ \Theta \]

By using the header \( O(n, \log n) \),

here we see that

\[ \Theta \]

How is the connection is \( \Omega \)

here modern small sum up as \( \Omega \).

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In search of finding success

1. Remove verk as a firm goal.

2. With an effort in a genuine way.

3. Visit *efs (verkaus *)

In search of finding success
1. add each u’s unvisited neighbors to Q
2. mark them as visited
3. until Q empty

**Connected**

**Def**: Vertices u,v are connected if there is a path between them.

**Connected Components**

**Def**: Connected Component is a maximal set of connected vertices.
(נ"ע, נ"ע פ'כ)

 Lans (נ"ע פ'כ) = (שע, שע פ'כ)

 הס בֵוי סע סע פ'כ וָל פְּעָה, וָל פְּעָה פ'כ

لعب וָל פְּעָה נבָא כְּנָה לִכְנָה פְּעָה נבָא נבָא

נִכְבָּר כְּנָה (נ"ע פ'כ), 13, בָּעָשָׁה, 15, וָל פְּעָה

בָּעָשָׁה.