Buckingham Pi Theorem:

1. Theorem:

2. Procedure:

   Step 1: List variables \( k \)

   Step 2: Express each variable in terms of \([M,L,T,θ]\) \( r \)

   Step 3: Find \( k - r \) number of pi terms

   Step 4: Select \( r \) repeating variables that represent all basic dimensions (often \( ρ, V, \) length scale, but selection is arbitrary)

   Step 5: Create \( Π \)-term multiplying variables in Step 4, multiplied by one other variable

   Step 6: Repeat Step 5 for other variables

   Step 7: Check that the \( Π \) terms are dimensionless

   Step 8: Express functional relationship between the \( Π \) terms