

The Genetic Code Has a Formulae-Based Pseudo-Inverse

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January 28, 2023

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```
a = 4; w = 3;  
d = Partition[Flatten[Tuples[Reverse[IdentityMatrix[a]], w],  
  (a * w)];  
  
PI = PseudoInverse[d];  
  
YI = Transpose[d] * (a^(-(w - 1))) - ((w - 1) / a^w) / w;  
  
PI == YI (* True *)  
= True
```

$$YI = d^T a^{-(w-1)} - \frac{\frac{w-1}{a^w}}{w}$$