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In[1]:= TextCell["Gell-Mann matrices"]
λ1 = {{0, 1, 0}, {1, 0, 0}, {0, 0, 0}}
λ2 = {{0, -I, 0}, {I, 0, 0}, {0, 0, 0}}
λ3 = {{1, 0, 0}, {0, -1, 0}, {0, 0, 0}}
λ4 = {{0, 0, 1}, {0, 0, 0}, {1, 0, 0}}
λ5 = {{0, 0, -I}, {0, 0, 0}, {I, 0, 0}}
λ6 = {{0, 0, 0}, {0, 0, 1}, {0, 1, 0}}
λ7 = {{0, 0, 0}, {0, 0, -I}, {0, I, 0}}
λ8 = (1 / Sqrt[3]) * {{1, 0, 0}, {0, 1, 0}, {0, 0, -2}}
b11 = ConjugateTranspose[λ1].λ1
b21 = ConjugateTranspose[λ1].λ2
b31 = ConjugateTranspose[λ1].λ3
b41 = ConjugateTranspose[λ1].λ4
b51 = ConjugateTranspose[λ1].λ5
b61 = ConjugateTranspose[λ1].λ6
b71 = ConjugateTranspose[λ1].λ7
b81 = ConjugateTranspose[λ1].λ8
b12 = ConjugateTranspose[λ2].λ1
b22 = ConjugateTranspose[λ2].λ2
b32 = ConjugateTranspose[λ2].λ3
b42 = ConjugateTranspose[λ2].λ4
b52 = ConjugateTranspose[λ2].λ5
b62 = ConjugateTranspose[λ2].λ6
b72 = ConjugateTranspose[λ2].λ7
b82 = ConjugateTranspose[λ2].λ8
b13 = ConjugateTranspose[λ3].λ1
b23 = ConjugateTranspose[λ3].λ2
b33 = ConjugateTranspose[λ3].λ3
b43 = ConjugateTranspose[λ3].λ4
b53 = ConjugateTranspose[λ3].λ5
b63 = ConjugateTranspose[λ3].λ6
b73 = ConjugateTranspose[λ3].λ7
b83 = ConjugateTranspose[λ3].λ8
b14 = ConjugateTranspose[λ4].λ1
b24 = ConjugateTranspose[λ4].λ2
b34 = ConjugateTranspose[λ4].λ3
b44 = ConjugateTranspose[λ4].λ4
b54 = ConjugateTranspose[λ4].λ5
b64 = ConjugateTranspose[λ4].λ6
b74 = ConjugateTranspose[λ4].λ7
b84 = ConjugateTranspose[λ4].λ8
b15 = ConjugateTranspose[λ5].λ1
b25 = ConjugateTranspose[λ5].λ2
b35 = ConjugateTranspose[λ5].λ3
b45 = ConjugateTranspose[λ5].λ4
b55 = ConjugateTranspose[λ5].λ5
b65 = ConjugateTranspose[λ5].λ6
b75 = ConjugateTranspose[λ5].λ7
b85 = ConjugateTranspose[λ5].λ8
b16 = ConjugateTranspose[λ6].λ1
b26 = ConjugateTranspose[λ6].λ2

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b36 = ConjugateTranspose[λ6].λ3
b46 = ConjugateTranspose[λ6].λ4
b56 = ConjugateTranspose[λ6].λ5
b66 = ConjugateTranspose[λ6].λ6
b76 = ConjugateTranspose[λ6].λ7
b86 = ConjugateTranspose[λ6].λ8
b17 = ConjugateTranspose[λ7].λ1
b27 = ConjugateTranspose[λ7].λ2
b37 = ConjugateTranspose[λ7].λ3
b47 = ConjugateTranspose[λ7].λ4
b57 = ConjugateTranspose[λ7].λ5
b67 = ConjugateTranspose[λ7].λ6
b77 = ConjugateTranspose[λ7].λ7
b87 = ConjugateTranspose[λ7].λ8
b18 = ConjugateTranspose[λ8].λ1
b28 = ConjugateTranspose[λ8].λ2
b38 = ConjugateTranspose[λ8].λ3
b48 = ConjugateTranspose[λ8].λ4
b58 = ConjugateTranspose[λ8].λ5
b68 = ConjugateTranspose[λ8].λ6
b78 = ConjugateTranspose[λ8].λ7
b88 = ConjugateTranspose[λ8].λ8
M = {b11, b21, b31, b41, b51, b61, b71, b81, b12, b22, b32, b42, b52, b62, b72,
      b82, b13, b23, b33, b43, b53, b63, b73, b83, b14, b24, b34, b44, b54, b64, b74,
      b84, b15, b25, b35, b45, b55, b65, b75, b85, b16, b26, b36, b46, b56, b66, b76, b86,
      b17, b27, b37, b47, b57, b67, b77, b87, b18, b28, b38, b48, b58, b68, b78, b88}
V = Map[ Flatten, M]
linearIndependenceQ = Not[RowReduce[V][[-1]] == Table[0, {3}]]

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Out[1]= Gell-Mann matrices

Out[2]= {{0, 1, 0}, {1, 0, 0}, {0, 0, 0}}

Out[3]= {{0, -i, 0}, {i, 0, 0}, {0, 0, 0}}

Out[4]= {{1, 0, 0}, {0, -1, 0}, {0, 0, 0}}

Out[5]= {{0, 0, 1}, {0, 0, 0}, {1, 0, 0}}

Out[6]= {{0, 0, -i}, {0, 0, 0}, {i, 0, 0}}

Out[7]= {{0, 0, 0}, {0, 0, 1}, {0, 1, 0}}

Out[8]= {{0, 0, 0}, {0, 0, -i}, {0, i, 0}}

Out[9]= $\left\{ \left\{ \frac{1}{\sqrt{3}}, 0, 0 \right\}, \left\{ 0, \frac{1}{\sqrt{3}}, 0 \right\}, \left\{ 0, 0, -\frac{2}{\sqrt{3}} \right\} \right\}$

Out[10]= {{1, 0, 0}, {0, 1, 0}, {0, 0, 0}}

Out[11]= {{i, 0, 0}, {0, -i, 0}, {0, 0, 0}}

Out[12]= {{0, -1, 0}, {1, 0, 0}, {0, 0, 0}}

Out[13]= {{0, 0, 0}, {0, 0, 1}, {0, 0, 0}}

Out[14]= {{0, 0, 0}, {0, 0, -i}, {0, 0, 0}}

Out[15]= {{0, 0, 1}, {0, 0, 0}, {0, 0, 0}}

Out[16]= {{0, 0, -i}, {0, 0, 0}, {0, 0, 0}}

$$\text{Out[17]}= \left\{ \left\{ 0, \frac{1}{\sqrt{3}}, 0 \right\}, \left\{ \frac{1}{\sqrt{3}}, 0, 0 \right\}, \{0, 0, 0\} \right\}$$

$$\text{Out[18]}= \left\{ \{-i, 0, 0\}, \{0, i, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[19]}= \left\{ \{1, 0, 0\}, \{0, 1, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[20]}= \left\{ \{0, i, 0\}, \{i, 0, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[21]}= \left\{ \{0, 0, 0\}, \{0, 0, i\}, \{0, 0, 0\} \right\}$$

$$\text{Out[22]}= \left\{ \{0, 0, 0\}, \{0, 0, 1\}, \{0, 0, 0\} \right\}$$

$$\text{Out[23]}= \left\{ \{0, 0, -i\}, \{0, 0, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[24]}= \left\{ \{0, 0, -1\}, \{0, 0, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[25]}= \left\{ \left\{ 0, -\frac{i}{\sqrt{3}}, 0 \right\}, \left\{ \frac{i}{\sqrt{3}}, 0, 0 \right\}, \{0, 0, 0\} \right\}$$

$$\text{Out[26]}= \left\{ \{0, 1, 0\}, \{-1, 0, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[27]}= \left\{ \{0, -i, 0\}, \{-i, 0, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[28]}= \left\{ \{1, 0, 0\}, \{0, 1, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[29]}= \left\{ \{0, 0, 1\}, \{0, 0, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[30]}= \left\{ \{0, 0, -i\}, \{0, 0, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[31]}= \left\{ \{0, 0, 0\}, \{0, 0, -1\}, \{0, 0, 0\} \right\}$$

$$\text{Out[32]}= \left\{ \{0, 0, 0\}, \{0, 0, i\}, \{0, 0, 0\} \right\}$$

$$\text{Out[33]}= \left\{ \left\{ \frac{1}{\sqrt{3}}, 0, 0 \right\}, \left\{ 0, -\frac{1}{\sqrt{3}}, 0 \right\}, \{0, 0, 0\} \right\}$$

$$\text{Out[34]}= \left\{ \{0, 0, 0\}, \{0, 0, 0\}, \{0, 1, 0\} \right\}$$

$$\text{Out[35]}= \left\{ \{0, 0, 0\}, \{0, 0, 0\}, \{0, -i, 0\} \right\}$$

$$\text{Out[36]}= \left\{ \{0, 0, 0\}, \{0, 0, 0\}, \{1, 0, 0\} \right\}$$

$$\text{Out[37]}= \left\{ \{1, 0, 0\}, \{0, 0, 0\}, \{0, 0, 1\} \right\}$$

$$\text{Out[38]}= \left\{ \{i, 0, 0\}, \{0, 0, 0\}, \{0, 0, -i\} \right\}$$

$$\text{Out[39]}= \left\{ \{0, 1, 0\}, \{0, 0, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[40]}= \left\{ \{0, i, 0\}, \{0, 0, 0\}, \{0, 0, 0\} \right\}$$

$$\text{Out[41]}= \left\{ \left\{ 0, 0, -\frac{2}{\sqrt{3}} \right\}, \{0, 0, 0\}, \left\{ \frac{1}{\sqrt{3}}, 0, 0 \right\} \right\}$$

$$\text{Out[42]}= \left\{ \{0, 0, 0\}, \{0, 0, 0\}, \{0, i, 0\} \right\}$$

$$\text{Out[43]}= \left\{ \{0, 0, 0\}, \{0, 0, 0\}, \{0, 1, 0\} \right\}$$

$$\text{Out[44]}= \left\{ \{0, 0, 0\}, \{0, 0, 0\}, \{i, 0, 0\} \right\}$$

$$\text{Out[45]}= \left\{ \{-i, 0, 0\}, \{0, 0, 0\}, \{0, 0, i\} \right\}$$

Out[46]= $\{\{1, 0, 0\}, \{0, 0, 0\}, \{0, 0, 1\}\}$

Out[47]= $\{\{0, -i, 0\}, \{0, 0, 0\}, \{0, 0, 0\}\}$

Out[48]= $\{\{0, 1, 0\}, \{0, 0, 0\}, \{0, 0, 0\}\}$

Out[49]= $\{\{0, 0, \frac{2i}{\sqrt{3}}\}, \{0, 0, 0\}, \{\frac{i}{\sqrt{3}}, 0, 0\}\}$

Out[50]= $\{\{0, 0, 0\}, \{0, 0, 0\}, \{1, 0, 0\}\}$

Out[51]= $\{\{0, 0, 0\}, \{0, 0, 0\}, \{i, 0, 0\}\}$

Out[52]= $\{\{0, 0, 0\}, \{0, 0, 0\}, \{0, -1, 0\}\}$

Out[53]= $\{\{0, 0, 0\}, \{1, 0, 0\}, \{0, 0, 0\}\}$

Out[54]= $\{\{0, 0, 0\}, \{i, 0, 0\}, \{0, 0, 0\}\}$

Out[55]= $\{\{0, 0, 0\}, \{0, 1, 0\}, \{0, 0, 1\}\}$

Out[56]= $\{\{0, 0, 0\}, \{0, i, 0\}, \{0, 0, -i\}\}$

Out[57]= $\{\{0, 0, 0\}, \{0, 0, -\frac{2}{\sqrt{3}}\}, \{0, \frac{1}{\sqrt{3}}, 0\}\}$

Out[58]= $\{\{0, 0, 0\}, \{0, 0, 0\}, \{i, 0, 0\}\}$

Out[59]= $\{\{0, 0, 0\}, \{0, 0, 0\}, \{-1, 0, 0\}\}$

Out[60]= $\{\{0, 0, 0\}, \{0, 0, 0\}, \{0, -i, 0\}\}$

Out[61]= $\{\{0, 0, 0\}, \{-i, 0, 0\}, \{0, 0, 0\}\}$

Out[62]= $\{\{0, 0, 0\}, \{1, 0, 0\}, \{0, 0, 0\}\}$

Out[63]= $\{\{0, 0, 0\}, \{0, -i, 0\}, \{0, 0, i\}\}$

Out[64]= $\{\{0, 0, 0\}, \{0, 1, 0\}, \{0, 0, 1\}\}$

Out[65]= $\{\{0, 0, 0\}, \{0, 0, \frac{2i}{\sqrt{3}}\}, \{0, \frac{i}{\sqrt{3}}, 0\}\}$

Out[66]= $\{\{0, \frac{1}{\sqrt{3}}, 0\}, \{\frac{1}{\sqrt{3}}, 0, 0\}, \{0, 0, 0\}\}$

Out[67]= $\{\{0, -\frac{i}{\sqrt{3}}, 0\}, \{\frac{i}{\sqrt{3}}, 0, 0\}, \{0, 0, 0\}\}$

Out[68]= $\{\{\frac{1}{\sqrt{3}}, 0, 0\}, \{0, -\frac{1}{\sqrt{3}}, 0\}, \{0, 0, 0\}\}$

Out[69]= $\{\{0, 0, \frac{1}{\sqrt{3}}\}, \{0, 0, 0\}, \{-\frac{2}{\sqrt{3}}, 0, 0\}\}$

Out[70]= $\{\{0, 0, -\frac{i}{\sqrt{3}}\}, \{0, 0, 0\}, \{-\frac{2i}{\sqrt{3}}, 0, 0\}\}$

$$\text{Out[71]} = \left\{ \{0, 0, 0\}, \left\{0, 0, \frac{1}{\sqrt{3}}\right\}, \left\{0, -\frac{2}{\sqrt{3}}, 0\right\} \right\}$$

$$\text{Out[72]} = \left\{ \{0, 0, 0\}, \left\{0, 0, -\frac{i}{\sqrt{3}}\right\}, \left\{0, -\frac{2i}{\sqrt{3}}, 0\right\} \right\}$$

$$\text{Out[73]} = \left\{ \left\{\frac{1}{3}, 0, 0\right\}, \left\{0, \frac{1}{3}, 0\right\}, \left\{0, 0, \frac{4}{3}\right\} \right\}$$

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Out[74]= {
  {{1, 0, 0}, {0, 1, 0}, {0, 0, 0}}, {{i, 0, 0}, {0, -i, 0}, {0, 0, 0}},
  {{0, -1, 0}, {1, 0, 0}, {0, 0, 0}}, {{0, 0, 0}, {0, 0, 1}, {0, 0, 0}},
  {{0, 0, 0}, {0, 0, -i}, {0, 0, 0}}, {{0, 0, 1}, {0, 0, 0}, {0, 0, 0}},
  {{0, 0, -i}, {0, 0, 0}, {0, 0, 0}}, {{0, 1/√3, 0}, {1/√3, 0, 0}, {0, 0, 0}},
  {{-i, 0, 0}, {0, i, 0}, {0, 0, 0}}, {{1, 0, 0}, {0, 1, 0}, {0, 0, 0}},
  {{0, i, 0}, {i, 0, 0}, {0, 0, 0}}, {{0, 0, 0}, {0, 0, i}, {0, 0, 0}},
  {{0, 0, 0}, {0, 0, 1}, {0, 0, 0}}, {{0, 0, -i}, {0, 0, 0}, {0, 0, 0}},
  {{0, 0, -1}, {0, 0, 0}, {0, 0, 0}}, {{0, -i/√3, 0}, {i/√3, 0, 0}, {0, 0, 0}},
  {{0, 1, 0}, {-1, 0, 0}, {0, 0, 0}}, {{0, -i, 0}, {-i, 0, 0}, {0, 0, 0}},
  {{1, 0, 0}, {0, 1, 0}, {0, 0, 0}}, {{0, 0, 1}, {0, 0, 0}, {0, 0, 0}},
  {{0, 0, -i}, {0, 0, 0}, {0, 0, 0}}, {{0, 0, 0}, {0, 0, -1}, {0, 0, 0}},
  {{0, 0, 0}, {0, 0, i}, {0, 0, 0}}, {{1/√3, 0, 0}, {0, -1/√3, 0}, {0, 0, 0}},
  {{0, 0, 0}, {0, 0, 0}, {0, 1, 0}}, {{0, 0, 0}, {0, 0, 0}, {0, -i, 0}},
  {{0, 0, 0}, {0, 0, 0}, {1, 0, 0}}, {{1, 0, 0}, {0, 0, 0}, {0, 0, 1}},
  {{i, 0, 0}, {0, 0, 0}, {0, 0, -i}}, {{0, 1, 0}, {0, 0, 0}, {0, 0, 0}},
  {{0, i, 0}, {0, 0, 0}, {0, 0, 0}}, {{0, 0, -2/√3}, {0, 0, 0}, {1/√3, 0, 0}},
  {{0, 0, 0}, {0, 0, 0}, {0, i, 0}}, {{0, 0, 0}, {0, 0, 0}, {0, 1, 0}},
  {{0, 0, 0}, {0, 0, 0}, {i, 0, 0}}, {{-i, 0, 0}, {0, 0, 0}, {0, 0, i}},
  {{1, 0, 0}, {0, 0, 0}, {0, 0, 1}}, {{0, -i, 0}, {0, 0, 0}, {0, 0, 0}},
  {{0, 1, 0}, {0, 0, 0}, {0, 0, 0}}, {{0, 0, 2i/√3}, {0, 0, 0}, {i/√3, 0, 0}},
  {{0, 0, 0}, {0, 0, 0}, {1, 0, 0}}, {{0, 0, 0}, {0, 0, 0}, {i, 0, 0}},
  {{0, 0, 0}, {0, 0, 0}, {0, -1, 0}}, {{0, 0, 0}, {1, 0, 0}, {0, 0, 0}},
  {{0, 0, 0}, {i, 0, 0}, {0, 0, 0}}, {{0, 0, 0}, {0, 1, 0}, {0, 0, 1}},
  {{0, 0, 0}, {0, i, 0}, {0, 0, -i}}, {{0, 0, 0}, {0, 0, -2/√3}, {0, 1/√3, 0}},
  {{0, 0, 0}, {0, 0, 0}, {i, 0, 0}}, {{0, 0, 0}, {0, 0, 0}, {-1, 0, 0}},
  {{0, 0, 0}, {0, 0, 0}, {0, -i, 0}}, {{0, 0, 0}, {-i, 0, 0}, {0, 0, 0}},
  {{0, 0, 0}, {1, 0, 0}, {0, 0, 0}}, {{0, 0, 0}, {0, -i, 0}, {0, 0, i}},
  {{0, 0, 0}, {0, 1, 0}, {0, 0, 1}}, {{0, 0, 0}, {0, 0, 2i/√3}, {0, i/√3, 0}},
  {{0, 1/√3, 0}, {1/√3, 0, 0}, {0, 0, 0}}, {{0, -i/√3, 0}, {i/√3, 0, 0}, {0, 0, 0}},
  {{1/√3, 0, 0}, {0, -1/√3, 0}, {0, 0, 0}}, {{0, 0, 1/√3}, {0, 0, 0}, {-2/√3, 0, 0}},
  {{0, 0, -i/√3}, {0, 0, 0}, {-2i/√3, 0, 0}}, {{0, 0, 0}, {0, 0, 1/√3}, {0, -2/√3, 0}},
  {{0, 0, 0}, {0, 0, -i/√3}, {0, -2i/√3, 0}}, {{1/3, 0, 0}, {0, 1/3, 0}, {0, 0, 4/3}}
}

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Out[75]= {
  {1, 0, 0, 0, 1, 0, 0, 0, 0}, {i, 0, 0, 0, -i, 0, 0, 0, 0}, {0, -1, 0, 1, 0, 0, 0, 0, 0},
  {0, 0, 0, 0, 0, 1, 0, 0, 0}, {0, 0, 0, 0, 0, -i, 0, 0, 0}, {0, 0, 1, 0, 0, 0, 0, 0, 0},
  {0, 0, -i, 0, 0, 0, 0, 0, 0}, {0, 1/√3, 0, 1/√3, 0, 0, 0, 0, 0}, {-i, 0, 0, 0, i, 0, 0, 0, 0},
  {1, 0, 0, 0, 1, 0, 0, 0, 0}, {0, i, 0, i, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, i, 0, 0, 0},
  {0, 0, 0, 0, 0, 1, 0, 0, 0}, {0, 0, -i, 0, 0, 0, 0, 0, 0}, {0, 0, -1, 0, 0, 0, 0, 0, 0},
  {0, -i/√3, 0, i/√3, 0, 0, 0, 0, 0}, {0, 1, 0, -1, 0, 0, 0, 0, 0},
  {0, -i, 0, -i, 0, 0, 0, 0, 0}, {1, 0, 0, 0, 1, 0, 0, 0, 0}, {0, 0, 1, 0, 0, 0, 0, 0, 0},
  {0, 0, -i, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, -1, 0, 0, 0}, {0, 0, 0, 0, 0, i, 0, 0, 0},
  {1/√3, 0, 0, 0, -1/√3, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 1, 0}, {0, 0, 0, 0, 0, 0, 0, 0, -i, 0},
  {0, 0, 0, 0, 0, 0, 1, 0, 0}, {1, 0, 0, 0, 0, 0, 0, 0, 1}, {i, 0, 0, 0, 0, 0, 0, 0, 0, -i},
  {0, 1, 0, 0, 0, 0, 0, 0, 0}, {0, i, 0, 0, 0, 0, 0, 0, 0}, {0, 0, -2/√3, 0, 0, 0, 1/√3, 0, 0},
  {0, 0, 0, 0, 0, 0, 0, i, 0}, {0, 0, 0, 0, 0, 0, 0, 1, 0}, {0, 0, 0, 0, 0, 0, i, 0, 0},
  {-i, 0, 0, 0, 0, 0, 0, 0, i}, {1, 0, 0, 0, 0, 0, 0, 0, 1}, {0, -i, 0, 0, 0, 0, 0, 0, 0},
  {0, 1, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 2i/√3, 0, 0, 0, i/√3, 0, 0}, {0, 0, 0, 0, 0, 0, 1, 0, 0},
  {0, 0, 0, 0, 0, 0, i, 0, 0}, {0, 0, 0, 0, 0, 0, 0, -1, 0}, {0, 0, 0, 1, 0, 0, 0, 0, 0},
  {0, 0, 0, i, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 1, 0, 0, 0, 1}, {0, 0, 0, 0, i, 0, 0, 0, -i},
  {0, 0, 0, 0, 0, -2/√3, 0, 1/√3, 0}, {0, 0, 0, 0, 0, 0, i, 0, 0}, {0, 0, 0, 0, 0, 0, -1, 0, 0},
  {0, 0, 0, 0, 0, 0, 0, -i, 0}, {0, 0, 0, -i, 0, 0, 0, 0, 0}, {0, 0, 0, 1, 0, 0, 0, 0, 0},
  {0, 0, 0, 0, -i, 0, 0, 0, i}, {0, 0, 0, 0, 1, 0, 0, 0, 1}, {0, 0, 0, 0, 0, 2i/√3, 0, i/√3, 0},
  {0, 1/√3, 0, 1/√3, 0, 0, 0, 0, 0}, {0, -i/√3, 0, i/√3, 0, 0, 0, 0, 0},
  {1/√3, 0, 0, 0, -1/√3, 0, 0, 0, 0}, {0, 0, 1/√3, 0, 0, 0, -2/√3, 0, 0},
  {0, 0, -i/√3, 0, 0, 0, -2i/√3, 0, 0}, {0, 0, 0, 0, 0, 1/√3, 0, -2/√3, 0},
  {0, 0, 0, 0, 0, -i/√3, 0, -2i/√3, 0}, {1/3, 0, 0, 0, 1/3, 0, 0, 0, 4/3}}

```

Out[76]= True