In[362]:=

MUSICAL NUMBERS FOR ALL OCTAVES

Out[362]= FOR MUSICAL NUMBERS

Out[363]= ALL OCTAVES

Here is a notebook to calculate the musical Numbers for any octave length and 2 - 44 partitions of that octave.

In[364]:=
```
oct = 8
```
Out[364]= 8

In[365]:=
```
eqtwo = Table[N[oct^(y/2)], {y, 1, 2}]
```
Out[365]= {2.82843, 8.}

In[366]:=
```
eqthree = Table[N[oct^(y/3)], {y, 1, 3}]
```
Out[366]= {2., 4., 8.}

In[367]:=
```
eqfour = Table[N[oct^(y / 4)], {y, 1, 4}]
```
Out[367]= {1.68179, 2.82843, 4.75683, 8.}

In[368]:=
```
eqfive = Table[N[oct^(y / 5)], {y, 1, 5}]
```
Out[368]= {1.51572, 2.2974, 3.4822, 5.27803, 8.}

In[369]:=
```
eqsix = Table[N[oct^(y / 6)], {y, 1, 6}]
```
Out[369]= {1.41421, 2., 2.82843, 4., 5.65685, 8.}

In[370]:=
```
eqseven = Table[N[oct^(y / 7)], {y, 1, 7}]
```
Out[370]= {1.3459, 1.81145, 2.43803, 3.28134, 4.41636, 5.94398, 8.}

In[371]:=
```
eqeight = Table[N[oct^(y/8)], {y, 1, 8}]
```
Out[371]= {1.29684, 1.68179, 2.18102, 2.82843, 3.66802, 4.75683, 6.16884, 8.}

In[372]:=
```
eqnine = Table[N[oct^(y/9)], {y, 1, 9}]
```
Out[372]= {1.25992, 1.5874, 2., 2.51984, 3.1748, 4., 5.03968, 6.3496, 8.}

In[373]:=
```
eqten = Table[N[oct^(y/10)], {y, 1, 10}]
```
Out[373]= {1.23114, 1.51572, 1.86607, 2.2974, 2.82843, 3.4822, 4.28709, 5.27803, 6.49802, 8.}

In[374]:=
```
eqeleven = Table[N[oct^(y/11)], {y, 1, 11}]
```
Out[374]= {1.20809, 1.45948, 1.76318, 2.13008, 2.57333, 3.10881, 3.75572, 4.53725, 5.4814, 6.62203, 8.}

In[375]:=
```
eqtwelve = Table[N[oct^(y/12)], {y, 1, 12}]
```
Out[375]=
```
{1.18921, 1.41421, 1.68179, 2., 2.37841, 2.82843, 3.36359, 4., 4.75683, 5.65685, 6.72717, 8.}
```

In[376]:=
```
eqthirteen = Table[N[oct^(n/13), 6], {n, 0, 13}]
```
Out[376]=
```
{1.00000, 1.17346, 1.37701, 1.61587, 1.89616, 2.22506,
 2.61102, 3.06393, 3.59540, 4.21906, 4.95091, 5.80969, 6.81744, 8.00000}
```

In[377]:=
```
eqfourteen = Table[N[oct^(n/14), 6], {n, 0, 14}]
```
Out[377]=
```
{1.00000, 1.16013, 1.34590, 1.56142, 1.81145, 2.10151, 2.43803,
 2.82843, 3.28134, 3.80678, 4.41636, 5.12355, 5.94398, 6.89578, 8.00000}
```

In[378]:=
```
eqfifteen = Table[N[oct^(n/15), 6], {n, 0, 15}]
```
Out[378]=
```
{1.00000, 1.14870, 1.31951, 1.51572, 1.74110, 2.00000, 2.29740, 2.63902,
 3.03143, 3.48220, 4.00000, 4.59479, 5.27803, 6.06287, 6.96440, 8.00000}
```

In[379]:=
```
eqsixteen = Table[N[oct^(n/16), 6], {n, 0, 16}]
```
Out[379]=
```
{1.00000, 1.13879, 1.29684, 1.47683, 1.68179, 1.91521, 2.18102, 2.48372,
 2.82843, 3.22098, 3.66802, 4.17710, 4.75683, 5.41702, 6.16884, 7.02501, 8.00000}
```

In[380]:=
```
eq17 = Table[N[oct^(n/17), 6], {n, 0, 17}]
```
Out[380]=
```
{1.00000, 1.13012, 1.27716, 1.44334, 1.63114, 1.84338, 2.08323, 2.35429, 2.66062,
 3.00681, 3.39805, 3.84019, 4.33986, 4.90454, 5.54270, 6.26389, 7.07892, 8.00000}
```

In[381]:=
```
eq18 = Table[N[oct^(n/18), 6], {n, 0, 18}]
```
Out[381]=
```
{1.00000, 1.12246, 1.25992, 1.41421, 1.58740, 1.78180, 2.00000, 2.24492, 2.51984, 2.82843,
 3.17480, 3.56359, 4.00000, 4.48985, 5.03968, 5.65685, 6.34960, 7.12719, 8.00000}
```

In[382]:=
```
eq19 = Table[N[oct^(n/19), 6], {n, 0, 19}]
```
Out[382]=
```
{1.00000, 1.11566, 1.24469, 1.38865, 1.54926, 1.72844, 1.92835, 2.15138, 2.40021, 2.67781,
 2.98752, 3.33305, 3.71854, 4.14862, 4.62844, 5.16376, 5.76099, 6.42729, 7.17066, 8.00000}
```

In[383]:=
```
eq20 = Table[N[oct^(n/20), 6], {n, 0, 20}]
```
Out[383]=
```
{1.00000, 1.10957, 1.23114, 1.36604, 1.51572, 1.68179,
 1.86607, 2.07053, 2.29740, 2.54912, 2.82843, 3.13834, 3.48220,
 3.86375, 4.28709, 4.75683, 5.27803, 5.85634, 6.49802, 7.21000, 8.00000}
```

In[384]:=
```
eq21 = Table[N[oct^(n/21), 6], {n, 0, 21}]
```
Out[384]=
```
{1.00000, 1.10409, 1.21901, 1.34590, 1.48599, 1.64067,
 1.81145, 2.00000, 2.20818, 2.43803, 2.69180, 2.97199, 3.28134, 3.62289,
 4.00000, 4.41636, 4.87605, 5.38360, 5.94398, 6.56268, 7.24579, 8.00000}
```

In[385]:=
```
eq22 = Table[N[oct^(n/22), 6], {n, 0, 22}]
```
Out[385]=
```
{1.00000, 1.09913, 1.20809, 1.32785, 1.45948, 1.60416, 1.76318,
 1.93797, 2.13008, 2.34124, 2.57333, 2.82843, 3.10881, 3.41699, 3.75572,
 4.12803, 4.53725, 4.98703, 5.48140, 6.02478, 6.62203, 7.27848, 8.00000}
```

In[386]:=
```
eq23 = Table[N[oct^(n / 23), 6], {n, 0, 23}]
```

Out[386]=
```
{1.00000, 1.09462, 1.19820, 1.31158, 1.43568, 1.57153, 1.72024, 1.88301,
 2.06119, 2.25623, 2.46972, 2.70341, 2.95922, 3.23923, 3.54574, 3.88125,
 4.24851, 4.65052, 5.09057, 5.57225, 6.09952, 6.67668, 7.30845, 8.00000}
```

In[387]:=
```
eqs24 = Table[N[oct^(n / 24), 6], {n, 0, 24}]
```

Out[387]=
```
{1.00000, 1.09051, 1.18921, 1.29684, 1.41421, 1.54221, 1.68179, 1.83401,
 2.00000, 2.18102, 2.37841, 2.59368, 2.82843, 3.08442, 3.36359, 3.66802, 4.00000,
 4.36203, 4.75683, 5.18736, 5.65685, 6.16884, 6.72717, 7.33603, 8.00000}
```

In[388]:=
```
eqs25 = Table[N[oct^(n / 25), 6], {n, 0, 25}]
```

Out[388]=
```
{1.00000, 1.08673, 1.18099, 1.28343, 1.39474, 1.51572, 1.64718, 1.79005,
 1.94531, 2.11404, 2.29740, 2.49666, 2.71321, 2.94854, 3.20428, 3.48220, 3.78423,
 4.11246, 4.46915, 4.85678, 5.27803, 5.73582, 6.23332, 6.77396, 7.36150, 8.00000}
```

In[389]:=
```
eqs26 = Table[N[oct^(n / 26), 6], {n, 0, 26}]
```

Out[389]=
```
{1.00000, 1.08326, 1.17346, 1.27117, 1.37701, 1.49166, 1.61587, 1.75041, 1.89616,
 2.05404, 2.22506, 2.41033, 2.61102, 2.82843, 3.06393, 3.31905, 3.59540, 3.89477,
 4.21906, 4.57036, 4.95091, 5.36314, 5.80969, 6.29343, 6.81744, 7.38509, 8.00000}
```

In[390]:=
```
eqs26 = Table[N[oct^(n / 26), 6], {n, 0, 26}]
```

Out[390]=
```
{1.00000, 1.08326, 1.17346, 1.27117, 1.37701, 1.49166, 1.61587, 1.75041, 1.89616,
 2.05404, 2.22506, 2.41033, 2.61102, 2.82843, 3.06393, 3.31905, 3.59540, 3.89477,
 4.21906, 4.57036, 4.95091, 5.36314, 5.80969, 6.29343, 6.81744, 7.38509, 8.00000}
```

In[391]:=
```
eqs27 = Table[N[oct^(n / 27), 6], {n, 0, 27}]
```

Out[391]=
```
{1.00000, 1.08006, 1.16653, 1.25992, 1.36079, 1.46973, 1.58740, 1.71449, 1.85175, 2.00000,
 2.16012, 2.33306, 2.51984, 2.72158, 2.93947, 3.17480, 3.42898, 3.70350, 4.00000,
 4.32024, 4.66612, 5.03968, 5.44316, 5.87894, 6.34960, 6.85795, 7.40700, 8.00000}
```

In[392]:=
```
eqs28 = Table[N[oct^(n / 28), 6], {n, 0, 28}]
```

Out[392]=
```
{1.00000, 1.07709, 1.16013, 1.24957, 1.34590, 1.44966, 1.56142, 1.68179, 1.81145, 1.95110,
 2.10151, 2.26353, 2.43803, 2.62598, 2.82843, 3.04648, 3.28134, 3.53431, 3.80678, 4.10026,
 4.41636, 4.75683, 5.12355, 5.51854, 5.94398, 6.40222, 6.89578, 7.42740, 8.00000}
```

In[393]:=
```
eqs29 = Table[N[oct^(n / 29), 6], {n, 0, 29}]
```

Out[393]=
```
{1.00000, 1.07434, 1.15420, 1.24000, 1.33218, 1.43122, 1.53761, 1.65191, 1.77471, 1.90664,
 2.04838, 2.20065, 2.36424, 2.54000, 2.72882, 2.93167, 3.14961, 3.38374, 3.63529, 3.90553,
 4.19586, 4.50777, 4.84287, 5.20288, 5.58965, 6.00518, 6.45159, 6.93119, 7.44644, 8.00000}
```

In[394]:=
```
eqs30 = Table[N[oct^(n / 30), 6], {n, 0, 30}]
```

Out[394]=
```
{1.00000, 1.07177, 1.14870, 1.23114, 1.31951, 1.41421, 1.51572,
 1.62450, 1.74110, 1.86607, 2.00000, 2.14355, 2.29740, 2.46229, 2.63902,
 2.82843, 3.03143, 3.24901, 3.48220, 3.73213, 4.00000, 4.28709, 4.59479,
 4.92458, 5.27803, 5.65685, 6.06287, 6.49802, 6.96440, 7.46426, 8.00000}
```

In[395]:=
```
eqs31 = Table[N[oct^(n / 31), 6], {n, 0, 31}]
```

Out[395]=
```
{1.00000, 1.06938, 1.14357, 1.22291, 1.30776, 1.39849, 1.49552, 1.59928,
 1.71023, 1.82889, 1.95578, 2.09147, 2.23657, 2.39175, 2.55769, 2.73514,
 2.92490, 3.12783, 3.34484, 3.57690, 3.82506, 4.09045, 4.37424, 4.67772,
 5.00226, 5.34932, 5.72045, 6.11733, 6.54175, 6.99562, 7.48097, 8.00000}
```

In[396]:=
```
eqs32 = Table[N[oct^(n / 32), 6], {n, 0, 32}]
```

Out[396]=
```
{1.00000, 1.06714, 1.13879, 1.21525, 1.29684, 1.38391, 1.47683, 1.57598,
 1.68179, 1.79471, 1.91521, 2.04379, 2.18102, 2.32745, 2.48372, 2.65047,
 2.82843, 3.01833, 3.22098, 3.43724, 3.66802, 3.91429, 4.17710, 4.45755, 4.75683,
 5.07620, 5.41702, 5.78072, 6.16884, 6.58302, 7.02501, 7.49667, 8.00000}
```

In[397]:=
```
eqs33 = Table[N[oct^(n / 33), 6], {n, 0, 33}]
```

Out[397]=
```
{1.00000, 1.06504, 1.13431, 1.20809, 1.28666, 1.37035, 1.45948, 1.55441,
 1.65551, 1.76318, 1.87786, 2.00000, 2.13008, 2.26863, 2.41618, 2.57333, 2.74070,
 2.91896, 3.10881, 3.31101, 3.52637, 3.75572, 4.00000, 4.26016, 4.53725, 4.83236,
 5.14666, 5.48140, 5.83792, 6.21763, 6.62203, 7.05273, 7.51145, 8.00000}
```

In[398]:=
```
eqs34 = Table[N[oct^(n / 34), 6], {n, 0, 34}]
```

Out[398]=
```
{1.00000, 1.06307, 1.13012, 1.20139, 1.27716, 1.35771, 1.44334, 1.53437,
 1.63114, 1.73402, 1.84338, 1.95964, 2.08323, 2.21462, 2.35429, 2.50278, 2.66062,
 2.82843, 3.00681, 3.19645, 3.39805, 3.61236, 3.84019, 4.08238, 4.33986, 4.61357,
 4.90454, 5.21386, 5.54270, 5.89227, 6.26389, 6.65895, 7.07892, 7.52538, 8.00000}
```

In[399]:=
```
eqs35 = Table[N[oct^(n / 35), 6], {n, 0, 35}]
```

Out[399]=
```
{1.00000, 1.06121, 1.12617, 1.19511, 1.26827, 1.34590, 1.42829, 1.51572, 1.60850,
 1.70696, 1.81145, 1.92233, 2.04000, 2.16488, 2.29740, 2.43803, 2.58727, 2.74564,
 2.91371, 3.09207, 3.28134, 3.48220, 3.69536, 3.92156, 4.16161, 4.41636, 4.68670,
 4.97358, 5.27803, 5.60112, 5.94398, 6.30783, 6.69395, 7.10370, 7.53854, 8.00000}
```

In[400]:=
```
eqs36 = Table[N[oct^(n / 36), 6], {n, 0, 36}]
```

Out[400]=
```
{1.00000, 1.05946, 1.12246, 1.18921, 1.25992, 1.33484, 1.41421, 1.49831, 1.58740, 1.68179,
 1.78180, 1.88775, 2.00000, 2.11893, 2.24492, 2.37841, 2.51984, 2.66968, 2.82843,
 2.99661, 3.17480, 3.36359, 3.56359, 3.77550, 4.00000, 4.23785, 4.48985, 4.75683,
 5.03968, 5.33936, 5.65685, 5.99323, 6.34960, 6.72717, 7.12719, 7.55099, 8.00000}
```

In[401]:=
```
eqs37 = Table[N[oct^(n/37), 6], {n, 0, 37}]
```

Out[401]=
```
{1.00000, 1.05781, 1.11896, 1.18365, 1.25208, 1.32446, 1.40103, 1.48202, 1.56770, 1.65833,
 1.75420, 1.85561, 1.96288, 2.07636, 2.19639, 2.32337, 2.45768, 2.59976, 2.75005, 2.90903,
 3.07721, 3.25510, 3.44328, 3.64234, 3.85290, 4.07564, 4.31126, 4.56049, 4.82413,
 5.10302, 5.39803, 5.71009, 6.04019, 6.38938, 6.75875, 7.14948, 7.56279, 8.00000}
```

In[402]:=
```
eqs38 = Table[N[oct^(n/38), 6], {n, 0, 38}]
```

Out[402]=
```
{1.00000, 1.05625, 1.11566, 1.17841, 1.24469, 1.31470, 1.38865, 1.46676, 1.54926, 1.63640,
 1.72844, 1.82566, 1.92835, 2.03682, 2.15138, 2.27239, 2.40021, 2.53521, 2.67781, 2.82843,
 2.98752, 3.15556, 3.33305, 3.52052, 3.71854, 3.92770, 4.14862, 4.38197, 4.62844, 4.88878,
 5.16376, 5.45420, 5.76099, 6.08502, 6.42729, 6.78881, 7.17066, 7.57399, 8.00000}
```

In[403]:=
```
eqs39 = Table[N[oct^(n/39), 6], {n, 0, 39}]
```

Out[403]=
```
{1.00000, 1.05477, 1.11253, 1.17346, 1.23773, 1.30551, 1.37701, 1.45242, 1.53197, 1.61587,
 1.70436, 1.79770, 1.89616, 2.00000, 2.10953, 2.22506, 2.34692, 2.47545, 2.61102, 2.75402,
 2.90485, 3.06393, 3.23173, 3.40872, 3.59540, 3.79231, 4.00000, 4.21906, 4.45013, 4.69384,
 4.95091, 5.22205, 5.50804, 5.80969, 6.12787, 6.46346, 6.81744, 7.19081, 7.58462, 8.00000}
```

In[404]:=
```
eqs40 = Table[N[oct^(n/40), 6], {n, 0, 40}]
```

Out[404]=
```
{1.00000, 1.05336, 1.10957, 1.16878, 1.23114, 1.29684, 1.36604, 1.43893,
 1.51572, 1.59660, 1.68179, 1.77154, 1.86607, 1.96564, 2.07053, 2.18102,
 2.29740, 2.41999, 2.54912, 2.68515, 2.82843, 2.97935, 3.13834, 3.30580,
 3.48220, 3.66802, 3.86375, 4.06992, 4.28709, 4.51586, 4.75683, 5.01066, 5.27803,
 5.55967, 5.85634, 6.16884, 6.49802, 6.84476, 7.21000, 7.59474, 8.00000}
```

In[405]:=
```
eqs41 = Table[N[oct^(n/41), 6], {n, 0, 41}]
```

Out[405]=
```
{1.00000, 1.05203, 1.10676, 1.16434, 1.22492, 1.28864, 1.35569, 1.42622,
 1.50042, 1.57848, 1.66060, 1.74700, 1.83789, 1.93351, 2.03410, 2.13993,
 2.25126, 2.36838, 2.49160, 2.62123, 2.75760, 2.90107, 3.05200, 3.21079, 3.37783,
 3.55357, 3.73845, 3.93294, 4.13756, 4.35282, 4.57928, 4.81753, 5.06816, 5.33184,
 5.60924, 5.90107, 6.20808, 6.53106, 6.87085, 7.22831, 7.60437, 8.00000}
```

In[406]:=
```
eqs42 = Table[N[oct^(n/42), 6], {n, 0, 42}]
```

Out[406]=
```
{1.00000, 1.05076, 1.10409, 1.16013, 1.21901, 1.28089, 1.34590, 1.41421,
 1.48599, 1.56142, 1.64067, 1.72395, 1.81145, 1.90339, 2.00000, 2.10151, 2.20818,
 2.32026, 2.43803, 2.56177, 2.69180, 2.82843, 2.97199, 3.12284, 3.28134, 3.44789,
 3.62289, 3.80678, 4.00000, 4.20303, 4.41636, 4.64052, 4.87605, 5.12355, 5.38360,
 5.65685, 5.94398, 6.24567, 6.56268, 6.89578, 7.24579, 7.61356, 8.00000}
```

In[407]:=
```
eqs43 = Table[N[oct^(n/43), 6], {n, 0, 43}]
```

Out[407]=
```
{1.00000, 1.04955, 1.10155, 1.15613, 1.21341, 1.27353, 1.33663, 1.40286,
 1.47237, 1.54532, 1.62189, 1.70225, 1.78659, 1.87511, 1.96802, 2.06553, 2.16787,
 2.27528, 2.38802, 2.50634, 2.63052, 2.76086, 2.89765, 3.04122, 3.19191, 3.35006,
 3.51604, 3.69026, 3.87310, 4.06500, 4.26641, 4.47780, 4.69967, 4.93252, 5.17692,
 5.43342, 5.70263, 5.98518, 6.28173, 6.59298, 6.91964, 7.26249, 7.62233, 8.00000}
```

In[408]:=
```
eqs44 = Table[N[oct^(n / 44), 6], {n, 0, 44}]
```

Out[408]=
```
{1.00000, 1.04839, 1.09913, 1.15232, 1.20809, 1.26655, 1.32785, 1.39211, 1.45948,
 1.53011, 1.60416, 1.68179, 1.76318, 1.84851, 1.93797, 2.03176, 2.13008, 2.23317,
 2.34124, 2.45454, 2.57333, 2.69787, 2.82843, 2.96531, 3.10881, 3.25926, 3.41699,
 3.58236, 3.75572, 3.93748, 4.12803, 4.32781, 4.53725, 4.75683, 4.98703, 5.22838,
 5.48140, 5.74667, 6.02478, 6.31635, 6.62203, 6.94250, 7.27848, 7.63071, 8.00000}
```