In[456]:=

MUSICAL NUMBERS FOR ALL OCTAVES

Out[456]= FOR MUSICAL NUMBERS

Out[457]= ALL OCTAVES

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

In[458]:=
```
oct = 10
```
Out[458]= 10

In[459]:=
```
eqtwo = Table[N[oct^(y/2)], {y, 1, 2}]
```
Out[459]= {3.16228, 10.}

In[460]:=
```
eqthree = Table[N[oct^(y/3)], {y, 1, 3}]
```
Out[460]= {2.15443, 4.64159, 10.}

In[461]:=
```
eqfour = Table[N[oct^(y / 4)], {y, 1, 4}]
```
Out[461]= {1.77828, 3.16228, 5.62341, 10.}

In[462]:=
```
eqfive = Table[N[oct^(y / 5)], {y, 1, 5}]
```
Out[462]= {1.58489, 2.51189, 3.98107, 6.30957, 10.}

In[463]:=
```
eqsix = Table[N[oct^(y / 6)], {y, 1, 6}]
```
Out[463]= {1.4678, 2.15443, 3.16228, 4.64159, 6.81292, 10.}

In[464]:=
```
eqseven = Table[N[oct^(y / 7)], {y, 1, 7}]
```
Out[464]= {1.3895, 1.9307, 2.6827, 3.72759, 5.17947, 7.19686, 10.}

In[465]:=
```
eqeight = Table[N[oct^(y/8)], {y, 1, 8}]
```
Out[465]= {1.33352, 1.77828, 2.37137, 3.16228, 4.21697, 5.62341, 7.49894, 10.}

In[466]:=
```
eqnine = Table[N[oct^(y/9)], {y, 1, 9}]
```
Out[466]= {1.29155, 1.6681, 2.15443, 2.78256, 3.59381, 4.64159, 5.99484, 7.74264, 10.}

In[467]:=
```
eqten = Table[N[oct^(y/10)], {y, 1, 10}]
```
Out[467]= {1.25893, 1.58489, 1.99526, 2.51189, 3.16228, 3.98107, 5.01187, 6.30957, 7.94328, 10.}

In[468]:=
```
eqeleven = Table[N[oct^(y/11)], {y, 1, 11}]
```
Out[468]=
```
{1.23285, 1.51991, 1.87382, 2.31013,
 2.84804, 3.51119, 4.32876, 5.3367, 6.57933, 8.11131, 10.}
```

In[469]:=
```
eqtwelve = Table[N[oct^(y/12)], {y, 1, 12}]
```
Out[469]=
```
{1.21153, 1.4678, 1.77828, 2.15443, 2.61016,
 3.16228, 3.83119, 4.64159, 5.62341, 6.81292, 8.25404, 10.}
```

In[470]:=
```
eqthirteen = Table[N[oct^(n/13), 6], {n, 0, 13}]
```
Out[470]=
```
{1.00000, 1.19378, 1.42510, 1.70125, 2.03092, 2.42446,
 2.89427, 3.45511, 4.12463, 4.92388, 5.87802, 7.01704, 8.37678, 10.0000}
```

In[471]:=
```
eqfourteen = Table[N[oct^(n/14), 6], {n, 0, 14}]
```
Out[471]=
```
{1.00000, 1.17877, 1.38950, 1.63789, 1.93070, 2.27585, 2.68270,
 3.16228, 3.72759, 4.39397, 5.17947, 6.10540, 7.19686, 8.48343, 10.0000}
```

In[472]:=
```
eqfifteen = Table[N[oct^(n/15), 6], {n, 0, 15}]
```
Out[472]=
```
{1.00000, 1.16591, 1.35936, 1.58489, 1.84785, 2.15443, 2.51189, 2.92864,
 3.41455, 3.98107, 4.64159, 5.41170, 6.30957, 7.35642, 8.57696, 10.0000}
```

In[473]:=
```
eqsixteen = Table[N[oct^(n/16), 6], {n, 0, 16}]
```
Out[473]=
```
{1.00000, 1.15478, 1.33352, 1.53993, 1.77828, 2.05353, 2.37137, 2.73842,
 3.16228, 3.65174, 4.21697, 4.86968, 5.62341, 6.49382, 7.49894, 8.65964, 10.0000}
```

In[474]:=
```
eq17 = Table[N[oct^(n/17), 6], {n, 0, 17}]
```
Out[474]=
```
{1.00000, 1.14505, 1.31113, 1.50131, 1.71907, 1.96842, 2.25393, 2.58086, 2.95521,
 3.38386, 3.87468, 4.43669, 5.08022, 5.81709, 6.66085, 7.62699, 8.73326, 10.0000}
```

In[475]:=
```
eq18 = Table[N[oct^(n/18), 6], {n, 0, 18}]
```
Out[475]=
```
{1.00000, 1.13646, 1.29155, 1.46780, 1.66810, 1.89574, 2.15443, 2.44844, 2.78256, 3.16228,
 3.59381, 4.08424, 4.64159, 5.27500, 5.99484, 6.81292, 7.74264, 8.79923, 10.0000}
```

In[476]:=
```
eq19 = Table[N[oct^(n/19), 6], {n, 0, 19}]
```
Out[476]=
```
{1.00000, 1.12884, 1.27427, 1.43845, 1.62378, 1.83298, 2.06914, 2.33572, 2.63665, 2.97635,
 3.35982, 3.79269, 4.28133, 4.83293, 5.45559, 6.15848, 6.95193, 7.84760, 8.85867, 10.0000}
```

In[477]:=
```
eq20 = Table[N[oct^(n/20), 6], {n, 0, 20}]
```
Out[477]=
```
{1.00000, 1.12202, 1.25893, 1.41254, 1.58489, 1.77828,
 1.99526, 2.23872, 2.51189, 2.81838, 3.16228, 3.54813, 3.98107,
 4.46684, 5.01187, 5.62341, 6.30957, 7.07946, 7.94328, 8.91251, 10.0000}
```

In[478]:=
```
eq21 = Table[N[oct^(n/21), 6], {n, 0, 21}]
```
Out[478]=
```
{1.00000, 1.11588, 1.24520, 1.38950, 1.55052, 1.73020,
 1.93070, 2.15443, 2.40410, 2.68270, 2.99358, 3.34048, 3.72759, 4.15956,
 4.64159, 5.17947, 5.77969, 6.44947, 7.19686, 8.03086, 8.96151, 10.0000}
```

In[479]:=
```
eq22 = Table[N[oct^(n / 22), 6], {n, 0, 22}]
```

Out[479]=
```
{1.00000, 1.11034, 1.23285, 1.36887, 1.51991, 1.68761, 1.87382,
 2.08057, 2.31013, 2.56502, 2.84804, 3.16228, 3.51119, 3.89860, 4.32876,
 4.80638, 5.33670, 5.92553, 6.57933, 7.30527, 8.11131, 9.00628, 10.0000}
```

In[480]:=
```
eq23 = Table[N[oct^(n / 23), 6], {n, 0, 23}]
```

Out[480]=
```
{1.00000, 1.10530, 1.22168, 1.35031, 1.49250, 1.64965, 1.82335, 2.01534,
 2.22754, 2.46209, 2.72134, 3.00788, 3.32460, 3.67466, 4.06159, 4.48925,
 4.96195, 5.48442, 6.06190, 6.70019, 7.40568, 8.18547, 9.04736, 10.0000}
```

In[481]:=
```
eqs24 = Table[N[oct^(n / 24), 6], {n, 0, 24}]
```

Out[481]=
```
{1.00000, 1.10069, 1.21153, 1.33352, 1.46780, 1.61560, 1.77828, 1.95734,
 2.15443, 2.37137, 2.61016, 2.87298, 3.16228, 3.48070, 3.83119, 4.21697, 4.64159,
 5.10897, 5.62341, 6.18966, 6.81292, 7.49894, 8.25404, 9.08518, 10.0000}
```

In[482]:=
```
eqs25 = Table[N[oct^(n / 25), 6], {n, 0, 25}]
```

Out[482]=
```
{1.00000, 1.09648, 1.20226, 1.31826, 1.44544, 1.58489, 1.73780, 1.90546,
 2.08930, 2.29087, 2.51189, 2.75423, 3.01995, 3.31131, 3.63078, 3.98107, 4.36516,
 4.78630, 5.24807, 5.75440, 6.30957, 6.91831, 7.58578, 8.31764, 9.12011, 10.0000}
```

In[483]:=
```
eqs26 = Table[N[oct^(n / 26), 6], {n, 0, 26}]
```

Out[483]=
```
{1.00000, 1.09260, 1.19378, 1.30432, 1.42510, 1.55707, 1.70125, 1.85879, 2.03092,
 2.21898, 2.42446, 2.64897, 2.89427, 3.16228, 3.45511, 3.77505, 4.12463, 4.50657,
 4.92388, 5.37984, 5.87802, 6.42233, 7.01704, 7.66682, 8.37678, 9.15247, 10.0000}
```

In[484]:=
```
eqs26 = Table[N[oct^(n / 26), 6], {n, 0, 26}]
```

Out[484]=
```
{1.00000, 1.09260, 1.19378, 1.30432, 1.42510, 1.55707, 1.70125, 1.85879, 2.03092,
 2.21898, 2.42446, 2.64897, 2.89427, 3.16228, 3.45511, 3.77505, 4.12463, 4.50657,
 4.92388, 5.37984, 5.87802, 6.42233, 7.01704, 7.66682, 8.37678, 9.15247, 10.0000}
```

In[485]:=
```
eqs27 = Table[N[oct^(n / 27), 6], {n, 0, 27}]
```

Out[485]=
```
{1.00000, 1.08902, 1.18597, 1.29155, 1.40653, 1.53174, 1.66810, 1.81660, 1.97832, 2.15443,
 2.34623, 2.55510, 2.78256, 3.03027, 3.30003, 3.59381, 3.91375, 4.26216, 4.64159,
 5.05480, 5.50479, 5.99484, 6.52852, 7.10971, 7.74264, 8.43191, 9.18254, 10.0000}
```

In[486]:=
```
eqs28 = Table[N[oct^(n / 28), 6], {n, 0, 28}]
```

Out[486]=
```
{1.00000, 1.08571, 1.17877, 1.27980, 1.38950, 1.50859, 1.63789, 1.77828, 1.93070, 2.09618,
 2.27585, 2.47091, 2.68270, 2.91263, 3.16228, 3.43332, 3.72759, 4.04709, 4.39397, 4.77058,
 5.17947, 5.62341, 6.10540, 6.62870, 7.19686, 7.81371, 8.48343, 9.21055, 10.0000}
```

In[487]:=
```
eqs29 = Table[N[oct^(n / 29), 6], {n, 0, 29}]
```

Out[487]=
```
{1.00000, 1.08264, 1.17210, 1.26896, 1.37382, 1.48735, 1.61026, 1.74333, 1.88739, 2.04336,
 2.21222, 2.39503, 2.59294, 2.80722, 3.03920, 3.29034, 3.56225, 3.85662, 4.17532, 4.52035,
 4.89390, 5.29832, 5.73615, 6.21017, 6.72336, 7.27895, 7.88046, 8.53168, 9.23671, 10.0000}
```

In[488]:=
```
eqs30 = Table[N[oct^(n / 30), 6], {n, 0, 30}]
```

Out[488]=
```
{1.00000, 1.07978, 1.16591, 1.25893, 1.35936, 1.46780, 1.58489,
 1.71133, 1.84785, 1.99526, 2.15443, 2.32631, 2.51189, 2.71227, 2.92864,
 3.16228, 3.41455, 3.68695, 3.98107, 4.29866, 4.64159, 5.01187, 5.41170,
 5.84341, 6.30957, 6.81292, 7.35642, 7.94328, 8.57696, 9.26119, 10.0000}
```

In[489]:=
```
eqs31 = Table[N[oct^(n / 31), 6], {n, 0, 31}]
```

Out[489]=
```
{1.00000, 1.07711, 1.16016, 1.24961, 1.34596, 1.44974, 1.56152, 1.68192,
 1.81161, 1.95129, 2.10175, 2.26380, 2.43835, 2.62636, 2.82887, 3.04699,
 3.28193, 3.53498, 3.80755, 4.10113, 4.41734, 4.75794, 5.12481, 5.51995,
 5.94557, 6.40400, 6.89779, 7.42964, 8.00250, 8.61954, 9.28415, 10.0000}
```

In[490]:=
```
eqs32 = Table[N[oct^(n / 32), 6], {n, 0, 32}]
```

Out[490]=
```
{1.00000, 1.07461, 1.15478, 1.24094, 1.33352, 1.43301, 1.53993, 1.65482,
 1.77828, 1.91095, 2.05353, 2.20673, 2.37137, 2.54830, 2.73842, 2.94273,
 3.16228, 3.39821, 3.65174, 3.92419, 4.21697, 4.53158, 4.86968, 5.23299, 5.62341,
 6.04296, 6.49382, 6.97831, 7.49894, 8.05842, 8.65964, 9.30572, 10.0000}
```

In[491]:=
```
eqs33 = Table[N[oct^(n / 33), 6], {n, 0, 33}]
```

Out[491]=
```
{1.00000, 1.07227, 1.14976, 1.23285, 1.32194, 1.41747, 1.51991, 1.62975,
 1.74753, 1.87382, 2.00923, 2.15443, 2.31013, 2.47708, 2.65609, 2.84804, 3.05386,
 3.27455, 3.51119, 3.76494, 4.03702, 4.32876, 4.64159, 4.97702, 5.33670, 5.72237,
 6.13591, 6.57933, 7.05480, 7.56463, 8.11131, 8.69749, 9.32603, 10.0000}
```

In[492]:=
```
eqs34 = Table[N[oct^(n / 34), 6], {n, 0, 34}]
```

Out[492]=
```
{1.00000, 1.07007, 1.14505, 1.22528, 1.31113, 1.40300, 1.50131, 1.60651,
 1.71907, 1.83953, 1.96842, 2.10634, 2.25393, 2.41186, 2.58086, 2.76170, 2.95521,
 3.16228, 3.38386, 3.62096, 3.87468, 4.14617, 4.43669, 4.74756, 5.08022, 5.43618,
 5.81709, 6.22469, 6.66085, 7.12756, 7.62699, 8.16140, 8.73326, 9.34519, 10.0000}
```

In[493]:=
```
eqs35 = Table[N[oct^(n / 35), 6], {n, 0, 35}]
```

Out[493]=
```
{1.00000, 1.06800, 1.14062, 1.21819, 1.30103, 1.38950, 1.48398, 1.58489, 1.69267,
 1.80777, 1.93070, 2.06199, 2.20220, 2.35195, 2.51189, 2.68270, 2.86512, 3.05995,
 3.26803, 3.49025, 3.72759, 3.98107, 4.25179, 4.54091, 4.84969, 5.17947, 5.53168,
 5.90784, 6.30957, 6.73863, 7.19686, 7.68625, 8.20891, 8.76712, 9.36329, 10.0000}
```

In[494]:=
```
eqs36 = Table[N[oct^(n / 36), 6], {n, 0, 36}]
```

Out[494]=
```
{1.00000, 1.06605, 1.13646, 1.21153, 1.29155, 1.37686, 1.46780, 1.56475, 1.66810, 1.77828,
 1.89574, 2.02095, 2.15443, 2.29674, 2.44844, 2.61016, 2.78256, 2.96635, 3.16228,
 3.37115, 3.59381, 3.83119, 4.08424, 4.35400, 4.64159, 4.94817, 5.27500, 5.62341,
 5.99484, 6.39080, 6.81292, 7.26292, 7.74264, 8.25404, 8.79923, 9.38042, 10.0000}
```

In[495]:=
```
eqs37 = Table[N[oct^(n/37), 6], {n, 0, 37}]
```

Out[495]=
```
{1.00000, 1.06421, 1.13254, 1.20526, 1.28265, 1.36501, 1.45265, 1.54593, 1.64519, 1.75083,
 1.86325, 1.98288, 2.11020, 2.24570, 2.38989, 2.54335, 2.70665, 2.88044, 3.06540, 3.26222,
 3.47169, 3.69460, 3.93183, 4.18429, 4.45296, 4.73888, 5.04316, 5.36698, 5.71159,
 6.07832, 6.46861, 6.88395, 7.32597, 7.79636, 8.29696, 8.82970, 9.39665, 10.0000}
```

In[496]:=
```
eqs38 = Table[N[oct^(n/38), 6], {n, 0, 38}]
```

Out[496]=
```
{1.00000, 1.06247, 1.12884, 1.19935, 1.27427, 1.35388, 1.43845, 1.52831, 1.62378, 1.72521,
 1.83298, 1.94748, 2.06914, 2.19839, 2.33572, 2.48163, 2.63665, 2.80136, 2.97635, 3.16228,
 3.35982, 3.56970, 3.79269, 4.02961, 4.28133, 4.54878, 4.83293, 5.13483, 5.45559, 5.79639,
 6.15848, 6.54319, 6.95193, 7.38620, 7.84760, 8.33782, 8.85867, 9.41205, 10.0000}
```

In[497]:=
```
eqs39 = Table[N[oct^(n/39), 6], {n, 0, 39}]
```

Out[497]=
```
{1.00000, 1.06082, 1.12534, 1.19378, 1.26638, 1.34340, 1.42510, 1.51178, 1.60372, 1.70125,
 1.80472, 1.91448, 2.03092, 2.15443, 2.28546, 2.42446, 2.57191, 2.72833, 2.89427, 3.07029,
 3.25702, 3.45511, 3.66524, 3.88816, 4.12463, 4.37548, 4.64159, 4.92388, 5.22335, 5.54102,
 5.87802, 6.23551, 6.61474, 7.01704, 7.44380, 7.89652, 8.37678, 8.88624, 9.42668, 10.0000}
```

In[498]:=
```
eqs40 = Table[N[oct^(n/40), 6], {n, 0, 40}]
```

Out[498]=
```
{1.00000, 1.05925, 1.12202, 1.18850, 1.25893, 1.33352, 1.41254, 1.49624,
 1.58489, 1.67880, 1.77828, 1.88365, 1.99526, 2.11349, 2.23872, 2.37137,
 2.51189, 2.66073, 2.81838, 2.98538, 3.16228, 3.34965, 3.54813, 3.75837,
 3.98107, 4.21697, 4.46684, 4.73151, 5.01187, 5.30884, 5.62341, 5.95662, 6.30957,
 6.68344, 7.07946, 7.49894, 7.94328, 8.41395, 8.91251, 9.44061, 10.0000}
```

In[499]:=
```
eqs41 = Table[N[oct^(n/41), 6], {n, 0, 41}]
```

Out[499]=
```
{1.00000, 1.05777, 1.11887, 1.18351, 1.25188, 1.32419, 1.40069, 1.48160,
 1.56719, 1.65772, 1.75349, 1.85478, 1.96193, 2.07526, 2.19515, 2.32195,
 2.45609, 2.59797, 2.74805, 2.90680, 3.07472, 3.25233, 3.44021, 3.63895, 3.84916,
 4.07152, 4.30672, 4.55551, 4.81867, 5.09703, 5.39147, 5.70292, 6.03237, 6.38084,
 6.74945, 7.13935, 7.55177, 7.98802, 8.44947, 8.93757, 9.45387, 10.0000}
```

In[500]:=
```
eqs42 = Table[N[oct^(n/42), 6], {n, 0, 42}]
```

Out[500]=
```
{1.00000, 1.05635, 1.11588, 1.17877, 1.24520, 1.31537, 1.38950, 1.46780,
 1.55052, 1.63789, 1.73020, 1.82770, 1.93070, 2.03950, 2.15443, 2.27585, 2.40410,
 2.53958, 2.68270, 2.83388, 2.99358, 3.16228, 3.34048, 3.52874, 3.72759, 3.93766,
 4.15956, 4.39397, 4.64159, 4.90316, 5.17947, 5.47136, 5.77969, 6.10540, 6.44947,
 6.81292, 7.19686, 7.60243, 8.03086, 8.48343, 8.96151, 9.46652, 10.0000}
```

In[501]:=
```
eqs43 = Table[N[oct^(n/43), 6], {n, 0, 43}]
```

Out[501]=
```
{1.00000, 1.05501, 1.11304, 1.17427, 1.23886, 1.30701, 1.37891, 1.45476,
 1.53478, 1.61921, 1.70828, 1.80225, 1.90138, 2.00598, 2.11632, 2.23274, 2.35555,
 2.48513, 2.62183, 2.76605, 2.91821, 3.07873, 3.24809, 3.42676, 3.61526, 3.81413,
 4.02394, 4.24529, 4.47881, 4.72518, 4.98511, 5.25933, 5.54863, 5.85385, 6.17586,
 6.51559, 6.87400, 7.25212, 7.65105, 8.07192, 8.51594, 8.98439, 9.47860, 10.0000}
```

In[502]:=
```
eqs44 = Table[N[oct^(n / 44), 6], {n, 0, 44}]
```

Out[502]=
```
{1.00000, 1.05372, 1.11034, 1.16999, 1.23285, 1.29908, 1.36887, 1.44242, 1.51991,
 1.60157, 1.68761, 1.77828, 1.87382, 1.97449, 2.08057, 2.19235, 2.31013, 2.43424,
 2.56502, 2.70283, 2.84804, 3.00105, 3.16228, 3.33217, 3.51119, 3.69983, 3.89860,
 4.10806, 4.32876, 4.56132, 4.80638, 5.06460, 5.33670, 5.62341, 5.92553, 6.24388,
 6.57933, 6.93281, 7.30527, 7.69775, 8.11131, 8.54709, 9.00628, 9.49014, 10.0000}
```