In[503]:=

MUSICAL NUMBERS FOR ALL OCTAVES

Out[503]= FOR MUSICAL NUMBERS

Out[504]= ALL OCTAVES

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

In[505]:=
```
oct = 11
```
Out[505]= 11

In[506]:=
```
eqtwo = Table[N[oct^(y/2)], {y, 1, 2}]
```
Out[506]= {3.31662, 11.}

In[507]:=
```
eqthree = Table[N[oct^(y/3)], {y, 1, 3}]
```
Out[507]= {2.22398, 4.94609, 11.}

In[508]:=
```
eqfour = Table[N[oct^(y / 4)], {y, 1, 4}]
```
Out[508]= {1.82116, 3.31662, 6.04011, 11.}

In[509]:=
```
eqfive = Table[N[oct^(y / 5)], {y, 1, 5}]
```
Out[509]= {1.61539, 2.6095, 4.21537, 6.80948, 11.}

In[510]:=
```
eqsix = Table[N[oct^(y / 6)], {y, 1, 6}]
```
Out[510]= {1.4913, 2.22398, 3.31662, 4.94609, 7.37611, 11.}

In[511]:=
```
eqseven = Table[N[oct^(y / 7)], {y, 1, 7}]
```
Out[511]= {1.40854, 1.984, 2.79455, 3.93624, 5.54437, 7.80948, 11.}

In[512]:=
```
eqeight = Table[N[oct^(y/8)], {y, 1, 8}]
```
Out[512]= {1.3495, 1.82116, 2.45766, 3.31662, 4.4758, 6.04011, 8.15114, 11.}

In[513]:=
```
eqnine = Table[N[oct^(y/9)], {y, 1, 9}]
```
Out[513]= {1.3053, 1.70381, 2.22398, 2.90296, 3.78923, 4.94609, 6.45613, 8.42718, 11.}

In[514]:=
```
eqten = Table[N[oct^(y/10)], {y, 1, 10}]
```
Out[514]= {1.27098, 1.61539, 2.05314, 2.6095, 3.31662, 4.21537, 5.35766, 6.80948, 8.65473, 11.}

In[515]:=
```
eqeleven = Table[N[oct^(y/11)], {y, 1, 11}]
```
Out[515]=
```
{1.24358, 1.54648, 1.92316, 2.3916, 2.97413,
 3.69856, 4.59943, 5.71974, 7.11293, 8.84546, 11.}
```

In[516]:=
```
eqtwelve = Table[N[oct^(y/12)], {y, 1, 12}]
```
Out[516]=
```
{1.22119, 1.4913, 1.82116, 2.22398, 2.7159,
 3.31662, 4.05022, 4.94609, 6.04011, 7.37611, 9.00762, 11.}
```

In[517]:=
```
eqthirteen = Table[N[oct^(n/13), 6], {n, 0, 13}]
```
Out[517]=
```
{1.00000, 1.20256, 1.44615, 1.73909, 2.09136, 2.51499,
 3.02442, 3.63706, 4.37378, 5.25974, 6.32516, 7.60639, 9.14714, 11.0000}
```

In[518]:=
```
eqfourteen = Table[N[oct^(n/14), 6], {n, 0, 14}]
```
Out[518]=
```
{1.00000, 1.18682, 1.40854, 1.67169, 1.98400, 2.35465, 2.79455,
 3.31662, 3.93624, 4.67161, 5.54437, 6.58017, 7.80948, 9.26846, 11.0000}
```

In[519]:=
```
eqfifteen = Table[N[oct^(n/15), 6], {n, 0, 15}]
```
Out[519]=
```
{1.00000, 1.17335, 1.37674, 1.61539, 1.89542, 2.22398, 2.60950, 3.06185,
 3.59260, 4.21537, 4.94609, 5.80347, 6.80948, 7.98988, 9.37490, 11.0000}
```

In[520]:=
```
eqsixteen = Table[N[oct^(n/16), 6], {n, 0, 16}]
```
Out[520]=
```
{1.00000, 1.16168, 1.34950, 1.56769, 1.82116, 2.11561, 2.45766, 2.85502,
 3.31662, 3.85286, 4.47580, 5.19945, 6.04011, 7.01668, 8.15114, 9.46903, 11.0000}
```

In[521]:=
```
eq17 = Table[N[oct^(n/17), 6], {n, 0, 17}]
```
Out[521]=
```
{1.00000, 1.15149, 1.32592, 1.52678, 1.75806, 2.02438, 2.33104, 2.68416, 3.09077,
 3.55898, 4.09811, 4.71892, 5.43376, 6.25690, 7.20473, 8.29614, 9.55288, 11.0000}
```

In[522]:=
```
eq18 = Table[N[oct^(n/18), 6], {n, 0, 18}]
```
Out[522]=
```
{1.00000, 1.14250, 1.30530, 1.49130, 1.70381, 1.94660, 2.22398, 2.54089, 2.90296, 3.31662,
 3.78923, 4.32919, 4.94609, 5.65089, 6.45613, 7.37611, 8.42718, 9.62803, 11.0000}
```

In[523]:=
```
eq19 = Table[N[oct^(n/19), 6], {n, 0, 19}]
```
Out[523]=
```
{1.00000, 1.13451, 1.28712, 1.46026, 1.65669, 1.87954, 2.13236, 2.41920, 2.74461, 3.11380,
 3.53266, 4.00785, 4.54697, 5.15860, 5.85251, 6.63976, 7.53290, 8.54619, 9.69578, 11.0000}
```

In[524]:=
```
eq20 = Table[N[oct^(n/20), 6], {n, 0, 20}]
```
Out[524]=
```
{1.00000, 1.12738, 1.27098, 1.43288, 1.61539, 1.82116,
 2.05314, 2.31466, 2.60950, 2.94189, 3.31662, 3.73909, 4.21537,
 4.75232, 5.35766, 6.04011, 6.80948, 7.67686, 8.65473, 9.75715, 11.0000}
```

In[525]:=
```
eq21 = Table[N[oct^(n/21), 6], {n, 0, 21}]
```
Out[525]=
```
{1.00000, 1.12096, 1.25655, 1.40854, 1.57892, 1.76991,
 1.98400, 2.22398, 2.49299, 2.79455, 3.13257, 3.51149, 3.93624, 4.41237,
 4.94609, 5.54437, 6.21501, 6.96678, 7.80948, 8.75412, 9.81302, 11.0000}
```

In[526]:=
```
eq22 = Table[N[oct^(n / 22), 6], {n, 0, 22}]
```

Out[526]=
```
{1.00000, 1.11516, 1.24358, 1.38678, 1.54648, 1.72457, 1.92316,
 2.14463, 2.39160, 2.66701, 2.97413, 3.31662, 3.69856, 4.12447, 4.59943,
 5.12909, 5.71974, 6.37841, 7.11293, 7.93203, 8.84546, 9.86408, 11.0000}
```

In[527]:=
```
eq23 = Table[N[oct^(n / 23), 6], {n, 0, 23}]
```

Out[527]=
```
{1.00000, 1.10988, 1.23184, 1.36721, 1.51744, 1.68418, 1.86925, 2.07465,
 2.30263, 2.55565, 2.83648, 3.14816, 3.49410, 3.87805, 4.30419, 4.77715,
 5.30209, 5.88471, 6.53135, 7.24905, 8.04561, 8.92970, 9.91094, 11.0000}
```

In[528]:=
```
eqs24 = Table[N[oct^(n / 24), 6], {n, 0, 24}]
```

Out[528]=
```
{1.00000, 1.10507, 1.22119, 1.34950, 1.49130, 1.64800, 1.82116, 2.01252,
 2.22398, 2.45766, 2.71590, 3.00127, 3.31662, 3.66512, 4.05022, 4.47580, 4.94609,
 5.46579, 6.04011, 6.67476, 7.37611, 8.15114, 9.00762, 9.95408, 11.0000}
```

In[529]:=
```
eqs25 = Table[N[oct^(n / 25), 6], {n, 0, 25}]
```

Out[529]=
```
{1.00000, 1.10067, 1.21147, 1.33342, 1.46765, 1.61539, 1.77801, 1.95700,
 2.15400, 2.37084, 2.60950, 2.87219, 3.16132, 3.47956, 3.82983, 4.21537, 4.63972,
 5.10678, 5.62086, 6.18669, 6.80948, 7.49497, 8.24946, 9.07990, 9.99395, 11.0000}
```

In[530]:=
```
eqs26 = Table[N[oct^(n / 26), 6], {n, 0, 26}]
```

Out[530]=
```
{1.00000, 1.09661, 1.20256, 1.31874, 1.44615, 1.58587, 1.73909, 1.90711, 2.09136,
 2.29341, 2.51499, 2.75797, 3.02442, 3.31662, 3.63706, 3.98844, 4.37378, 4.79635,
 5.25974, 5.76790, 6.32516, 6.93625, 7.60639, 8.34127, 9.14714, 10.0309, 11.0000}
```

In[531]:=
```
eqs26 = Table[N[oct^(n / 26), 6], {n, 0, 26}]
```

Out[531]=
```
{1.00000, 1.09661, 1.20256, 1.31874, 1.44615, 1.58587, 1.73909, 1.90711, 2.09136,
 2.29341, 2.51499, 2.75797, 3.02442, 3.31662, 3.63706, 3.98844, 4.37378, 4.79635,
 5.25974, 5.76790, 6.32516, 6.93625, 7.60639, 8.34127, 9.14714, 10.0309, 11.0000}
```

In[532]:=
```
eqs27 = Table[N[oct^(n / 27), 6], {n, 0, 27}]
```

Out[532]=
```
{1.00000, 1.09287, 1.19437, 1.30530, 1.42653, 1.55902, 1.70381, 1.86205, 2.03498, 2.22398,
 2.43053, 2.65626, 2.90296, 3.17257, 3.46722, 3.78923, 4.14116, 4.52576, 4.94609,
 5.40545, 5.90748, 6.45613, 7.05573, 7.71103, 8.42718, 9.20985, 10.0652, 11.0000}
```

In[533]:=
```
eqs28 = Table[N[oct^(n / 28), 6], {n, 0, 28}]
```

Out[533]=
```
{1.00000, 1.08941, 1.18682, 1.29294, 1.40854, 1.53449, 1.67169, 1.82116, 1.98400, 2.16139,
 2.35465, 2.56518, 2.79455, 3.04441, 3.31662, 3.61317, 3.93624, 4.28819, 4.67161, 5.08931,
 5.54437, 6.04011, 6.58017, 7.16852, 7.80948, 8.50775, 9.26846, 10.0972, 11.0000}
```

In[534]:=
```
eqs29 = Table[N[oct^(n / 29), 6], {n, 0, 29}]
```

Out[534]=
```
{1.00000, 1.08620, 1.17983, 1.28153, 1.39200, 1.51200, 1.64233, 1.78390, 1.93767, 2.10470,
 2.28613, 2.48320, 2.69725, 2.92975, 3.18230, 3.45662, 3.75458, 4.07823, 4.42977, 4.81162,
 5.22639, 5.67691, 6.16626, 6.69780, 7.27515, 7.90228, 8.58346, 9.32336, 10.1270, 11.0000}
```

In[535]:=
```
eqs30 = Table[N[oct^(n/30), 6], {n, 0, 30}]
```

Out[535]=
```
{1.00000, 1.08321, 1.17335, 1.27098, 1.37674, 1.49130, 1.61539,
 1.74981, 1.89542, 2.05314, 2.22398, 2.40904, 2.60950, 2.82664, 3.06185,
 3.31662, 3.59260, 3.89155, 4.21537, 4.56613, 4.94609, 5.35766, 5.80347,
 6.28639, 6.80948, 7.37611, 7.98988, 8.65473, 9.37490, 10.1550, 11.0000}
```

In[536]:=
```
eqs31 = Table[N[oct^(n/31), 6], {n, 0, 31}]
```

Out[536]=
```
{1.00000, 1.08042, 1.16731, 1.26119, 1.36262, 1.47220, 1.59060, 1.71851,
 1.85672, 2.00604, 2.16737, 2.34167, 2.53000, 2.73346, 2.95329, 3.19080,
 3.44741, 3.72466, 4.02420, 4.34783, 4.69749, 5.07527, 5.48344, 5.92442,
 6.40088, 6.91565, 7.47182, 8.07271, 8.72193, 9.42337, 10.1812, 11.0000}
```

In[537]:=
```
eqs32 = Table[N[oct^(n/32), 6], {n, 0, 32}]
```

Out[537]=
```
{1.00000, 1.07781, 1.16168, 1.25208, 1.34950, 1.45451, 1.56769, 1.68968,
 1.82116, 1.96287, 2.11561, 2.28023, 2.45766, 2.64890, 2.85502, 3.07718,
 3.31662, 3.57470, 3.85286, 4.15267, 4.47580, 4.82407, 5.19945, 5.60404, 6.04011,
 6.51011, 7.01668, 7.56267, 8.15114, 8.78541, 9.46903, 10.2058, 11.0000}
```

In[538]:=
```
eqs33 = Table[N[oct^(n/33), 6], {n, 0, 33}]
```

Out[538]=
```
{1.00000, 1.07537, 1.15642, 1.24358, 1.33730, 1.43809, 1.54648, 1.66304,
 1.78838, 1.92316, 2.06811, 2.22398, 2.39160, 2.57185, 2.76569, 2.97413, 3.19829,
 3.43934, 3.69856, 3.97731, 4.27708, 4.59943, 4.94609, 5.31887, 5.71974, 6.15083,
 6.61441, 7.11293, 7.64902, 8.22552, 8.84546, 9.51213, 10.2291, 11.0000}
```

In[539]:=
```
eqs34 = Table[N[oct^(n/34), 6], {n, 0, 34}]
```

Out[539]=
```
{1.00000, 1.07307, 1.15149, 1.23563, 1.32592, 1.42281, 1.52678, 1.63834,
 1.75806, 1.88653, 2.02438, 2.17231, 2.33104, 2.50138, 2.68416, 2.88030, 3.09077,
 3.31662, 3.55898, 3.81904, 4.09811, 4.39757, 4.71892, 5.06374, 5.43376, 5.83082,
 6.25690, 6.71411, 7.20473, 7.73120, 8.29614, 8.90236, 9.55288, 10.2509, 11.0000}
```

In[540]:=
```
eqs35 = Table[N[oct^(n/35), 6], {n, 0, 35}]
```

Out[540]=
```
{1.00000, 1.07091, 1.14685, 1.22818, 1.31527, 1.40854, 1.50843, 1.61539, 1.72995,
 1.85262, 1.98400, 2.12469, 2.27535, 2.43671, 2.60950, 2.79455, 2.99271, 3.20494,
 3.43221, 3.67559, 3.93624, 4.21537, 4.51429, 4.83441, 5.17723, 5.54437, 5.93753,
 6.35858, 6.80948, 7.29236, 7.80948, 8.36328, 8.95634, 9.59146, 10.2716, 11.0000}
```

In[541]:=
```
eqs36 = Table[N[oct^(n/36), 6], {n, 0, 36}]
```

Out[541]=
```
{1.00000, 1.06888, 1.14250, 1.22119, 1.30530, 1.39520, 1.49130, 1.59402, 1.70381, 1.82116,
 1.94660, 2.08067, 2.22398, 2.37716, 2.54089, 2.71590, 2.90296, 3.10291, 3.31662,
 3.54506, 3.78923, 4.05022, 4.32919, 4.62737, 4.94609, 5.28676, 5.65089, 6.04011,
 6.45613, 6.90080, 7.37611, 7.88415, 8.42718, 9.00762, 9.62803, 10.2912, 11.0000}
```

In[542]:=
```
eqs37 = Table[N[oct^(n/37), 6], {n, 0, 37}]
```

Out[542]=
```
{1.00000, 1.06695, 1.13839, 1.21461, 1.29593, 1.38270, 1.47528, 1.57406, 1.67945, 1.79189,
 1.91187, 2.03987, 2.17645, 2.32217, 2.47765, 2.64354, 2.82054, 3.00938, 3.21088, 3.42586,
 3.65523, 3.89997, 4.16108, 4.43969, 4.73694, 5.05410, 5.39249, 5.75354, 6.13876,
 6.54978, 6.98831, 7.45621, 7.95544, 8.48808, 9.05640, 9.66276, 10.3097, 11.0000}
```

In[543]:=
```
eqs38 = Table[N[oct^(n/38), 6], {n, 0, 38}]
```

Out[543]=
```
{1.00000, 1.06514, 1.13451, 1.20841, 1.28712, 1.37096, 1.46026, 1.55538, 1.65669, 1.76460,
 1.87954, 2.00196, 2.13236, 2.27126, 2.41920, 2.57677, 2.74461, 2.92339, 3.11380, 3.31662,
 3.53266, 3.76276, 4.00785, 4.26891, 4.54697, 4.84314, 5.15860, 5.49461, 5.85251, 6.23372,
 6.63976, 7.07224, 7.53290, 8.02356, 8.54619, 9.10285, 9.69578, 10.3273, 11.0000}
```

In[544]:=
```
eqs39 = Table[N[oct^(n/39), 6], {n, 0, 39}]
```

Out[544]=
```
{1.00000, 1.06341, 1.13085, 1.20256, 1.27882, 1.35992, 1.44615, 1.53786, 1.63538, 1.73909,
 1.84937, 1.96665, 2.09136, 2.22398, 2.36501, 2.51499, 2.67447, 2.84407, 3.02442, 3.21622,
 3.42017, 3.63706, 3.86770, 4.11296, 4.37378, 4.65114, 4.94609, 5.25974, 5.59328, 5.94797,
 6.32516, 6.72626, 7.15280, 7.60639, 8.08874, 8.60168, 9.14714, 9.72720, 10.3440, 11.0000}
```

In[545]:=
```
eqs40 = Table[N[oct^(n/40), 6], {n, 0, 40}]
```

Out[545]=
```
{1.00000, 1.06178, 1.12738, 1.19703, 1.27098, 1.34950, 1.43288, 1.52140,
 1.61539, 1.71519, 1.82116, 1.93367, 2.05314, 2.17998, 2.31466, 2.45766,
 2.60950, 2.77072, 2.94189, 3.12364, 3.31662, 3.52153, 3.73909, 3.97009,
 4.21537, 4.47580, 4.75232, 5.04592, 5.35766, 5.68866, 6.04011, 6.41327, 6.80948,
 7.23018, 7.67686, 8.15114, 8.65473, 9.18942, 9.75715, 10.3600, 11.0000}
```

In[546]:=
```
eqs41 = Table[N[oct^(n/41), 6], {n, 0, 41}]
```

Out[546]=
```
{1.00000, 1.06023, 1.12409, 1.19179, 1.26357, 1.33967, 1.42036, 1.50591,
 1.59661, 1.69277, 1.79473, 1.90282, 2.01743, 2.13894, 2.26776, 2.40435,
 2.54916, 2.70269, 2.86548, 3.03806, 3.22104, 3.41504, 3.62073, 3.83880, 4.07001,
 4.31515, 4.57504, 4.85060, 5.14275, 5.45249, 5.78089, 6.12907, 6.49822, 6.88960,
 7.30456, 7.74451, 8.21095, 8.70549, 9.22982, 9.78573, 10.3751, 11.0000}
```

In[547]:=
```
eqs42 = Table[N[oct^(n/42), 6], {n, 0, 42}]
```

Out[547]=
```
{1.00000, 1.05875, 1.12096, 1.18682, 1.25655, 1.33038, 1.40854, 1.49130,
 1.57892, 1.67169, 1.76991, 1.87390, 1.98400, 2.10056, 2.22398, 2.35465, 2.49299,
 2.63947, 2.79455, 2.95874, 3.13257, 3.31662, 3.51149, 3.71780, 3.93624, 4.16751,
 4.41237, 4.67161, 4.94609, 5.23669, 5.54437, 5.87012, 6.21501, 6.58017, 6.96678,
 7.37611, 7.80948, 8.26832, 8.75412, 9.26846, 9.81302, 10.3896, 11.0000}
```

In[548]:=
```
eqs43 = Table[N[oct^(n/43), 6], {n, 0, 43}]
```

Out[548]=
```
{1.00000, 1.05735, 1.11799, 1.18210, 1.24990, 1.32158, 1.39737, 1.47751,
 1.56224, 1.65183, 1.74656, 1.84673, 1.95264, 2.06462, 2.18302, 2.30822, 2.44059,
 2.58056, 2.72855, 2.88503, 3.05048, 3.22543, 3.41040, 3.60599, 3.81279, 4.03145,
 4.26265, 4.50711, 4.76558, 5.03889, 5.32786, 5.63341, 5.95648, 6.29808, 6.65927,
 7.04118, 7.44498, 7.87195, 8.32340, 8.80074, 9.30545, 9.83911, 10.4034, 11.0000}
```

In[549]:=
```
eqs44 = Table[N[oct^(n / 44), 6], {n, 0, 44}]
```

Out[549]=
```
{1.00000, 1.05601, 1.11516, 1.17762, 1.24358, 1.31323, 1.38678, 1.46446, 1.54648,
 1.63310, 1.72457, 1.82116, 1.92316, 2.03088, 2.14463, 2.26475, 2.39160, 2.52555,
 2.66701, 2.81639, 2.97413, 3.14071, 3.31662, 3.50239, 3.69856, 3.90571, 4.12447,
 4.35548, 4.59943, 4.85705, 5.12909, 5.41637, 5.71974, 6.04011, 6.37841, 6.73567,
 7.11293, 7.51133, 7.93203, 8.37631, 8.84546, 9.34090, 9.86408, 10.4166, 11.0000}
```