In[315]:=

MUSICAL NUMBERS FOR ALL OCTAVES

Out[315]= FOR MUSICAL NUMBERS

Out[316]= ALL OCTAVES

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

In[317]:=
```
oct = 7
```
Out[317]= 7

In[318]:=
```
eqtwo = Table[N[oct^(y/2)], {y, 1, 2}]
```
Out[318]= {2.64575, 7.}

In[319]:=
```
eqthree = Table[N[oct^(y/3)], {y, 1, 3}]
```
Out[319]= {1.91293, 3.65931, 7.}

In[320]:=
```
eqfour = Table[N[oct^(y / 4)], {y, 1, 4}]
```
Out[320]= {1.62658, 2.64575, 4.30352, 7.}

In[321]:=
```
eqfive = Table[N[oct^(y / 5)], {y, 1, 5}]
```
Out[321]= {1.47577, 2.17791, 3.2141, 4.74328, 7.}

In[322]:=
```
eqsix = Table[N[oct^(y / 6)], {y, 1, 6}]
```
Out[322]= {1.38309, 1.91293, 2.64575, 3.65931, 5.06114, 7.}

In[323]:=
```
eqseven = Table[N[oct^(y / 7)], {y, 1, 7}]
```
Out[323]= {1.32047, 1.74364, 2.30242, 3.04028, 4.01459, 5.30115, 7.}

In[324]:=
```
eqeight = Table[N[oct^(y/8)], {y, 1, 8}]
```
Out[324]= {1.27537, 1.62658, 2.07449, 2.64575, 3.37432, 4.30352, 5.48859, 7.}

In[325]:=
```
eqnine = Table[N[oct^(y/9)], {y, 1, 9}]
```
Out[325]= {1.24137, 1.54099, 1.91293, 2.37465, 2.94781, 3.65931, 4.54254, 5.63895, 7.}

In[326]:=
```
eqten = Table[N[oct^(y/10)], {y, 1, 10}]
```
Out[326]= {1.21481, 1.47577, 1.79279, 2.17791, 2.64575, 3.2141, 3.90453, 4.74328, 5.7622, 7.}

In[327]:=
```
eqeleven = Table[N[oct^(y/11)], {y, 1, 11}]
```
Out[327]= {1.19351, 1.42447, 1.70013, 2.02912, 2.42178, 2.89043, 3.44977, 4.11734, 4.9141, 5.86504, 7.}

In[328]:=
```
eqtwelve = Table[N[oct^(y/12)], {y, 1, 12}]
```

Out[328]=
```
{1.17605, 1.38309, 1.62658, 1.91293, 2.2497,
 2.64575, 3.11153, 3.65931, 4.30352, 5.06114, 5.95214, 7.}
```

In[329]:=
```
eqthirteen = Table[N[oct^(n/13), 6], {n, 0, 13}]
```

Out[329]=
```
{1.00000, 1.16147, 1.34901, 1.56683, 1.81983, 2.11367,
 2.45496, 2.85136, 3.31177, 3.84652, 4.46761, 5.18899, 6.02685, 7.00000}
```

In[330]:=
```
eqfourteen = Table[N[oct^(n/14), 6], {n, 0, 14}]
```

Out[330]=
```
{1.00000, 1.14912, 1.32047, 1.51737, 1.74364, 2.00364, 2.30242,
 2.64575, 3.04028, 3.49363, 4.01459, 4.61324, 5.30115, 6.09164, 7.00000}
```

In[331]:=
```
eqfifteen = Table[N[oct^(n/15), 6], {n, 0, 15}]
```

Out[331]=
```
{1.00000, 1.13852, 1.29622, 1.47577, 1.68019, 1.91293, 2.17791, 2.47959,
 2.82305, 3.21410, 3.65931, 4.16619, 4.74328, 5.40031, 6.14834, 7.00000}
```

In[332]:=
```
eqsixteen = Table[N[oct^(n/16), 6], {n, 0, 16}]
```

Out[332]=
```
{1.00000, 1.12932, 1.27537, 1.44031, 1.62658, 1.83693, 2.07449, 2.34277,
 2.64575, 2.98791, 3.37432, 3.81070, 4.30352, 4.86007, 5.48859, 6.19840, 7.00000}
```

In[333]:=
```
eq17 = Table[N[oct^(n/17), 6], {n, 0, 17}]
```

Out[333]=
```
{1.00000, 1.12127, 1.25725, 1.40973, 1.58069, 1.77239, 1.98733, 2.22834, 2.49858,
 2.80159, 3.14135, 3.52231, 3.94948, 4.42845, 4.96550, 5.56769, 6.24290, 7.00000}
```

In[334]:=
```
eq18 = Table[N[oct^(n/18), 6], {n, 0, 18}]
```

Out[334]=
```
{1.00000, 1.11417, 1.24137, 1.38309, 1.54099, 1.71692, 1.91293, 2.13132, 2.37465, 2.64575,
 2.94781, 3.28435, 3.65931, 4.07707, 4.54254, 5.06114, 5.63895, 6.28273, 7.00000}
```

In[335]:=
```
eq19 = Table[N[oct^(n/19), 6], {n, 0, 19}]
```

Out[335]=
```
{1.00000, 1.10784, 1.22732, 1.35968, 1.50631, 1.66876, 1.84873, 2.04810, 2.26898, 2.51368,
 2.78476, 3.08509, 3.41780, 3.78639, 4.19473, 4.64711, 5.14827, 5.70349, 6.31858, 7.00000}
```

In[336]:=
```
eq20 = Table[N[oct^(n/20), 6], {n, 0, 20}]
```

Out[336]=
```
{1.00000, 1.10219, 1.21481, 1.33895, 1.47577, 1.62658,
 1.79279, 1.97599, 2.17791, 2.40046, 2.64575, 2.91611, 3.21410,
 3.54253, 3.90453, 4.30352, 4.74328, 5.22797, 5.76220, 6.35101, 7.00000}
```

In[337]:=
```
eq21 = Table[N[oct^(n/21), 6], {n, 0, 21}]
```

Out[337]=
```
{1.00000, 1.09709, 1.20361, 1.32047, 1.44868, 1.58933,
 1.74364, 1.91293, 2.09866, 2.30242, 2.52597, 2.77122, 3.04028, 3.33546,
 3.65931, 4.01459, 4.40437, 4.83200, 5.30115, 5.81584, 6.38051, 7.00000}
```

In[338]:=
```
eq22 = Table[N[oct^(n/22), 6], {n, 0, 22}]
```

Out[338]=
```
{1.00000, 1.09248, 1.19351, 1.30389, 1.42447, 1.55621, 1.70013,
 1.85735, 2.02912, 2.21678, 2.42178, 2.64575, 2.89043, 3.15774, 3.44977,
 3.76880, 4.11734, 4.49811, 4.91410, 5.36855, 5.86504, 6.40744, 7.00000}
```

In[339]:=
```
eq23 = Table[N[oct^(n / 23), 6], {n, 0, 23}]
```

Out[339]=
```
{1.00000, 1.08829, 1.18437, 1.28893, 1.40273, 1.52657, 1.66135, 1.80802,
 1.96765, 2.14136, 2.33042, 2.53616, 2.76007, 3.00375, 3.26894, 3.55755,
 3.87163, 4.21345, 4.58544, 4.99027, 5.43085, 5.91032, 6.43213, 7.00000}
```

In[340]:=
```
eqs24 = Table[N[oct^(n / 24), 6], {n, 0, 24}]
```

Out[340]=
```
{1.00000, 1.08446, 1.17605, 1.27537, 1.38309, 1.49990, 1.62658, 1.76395,
 1.91293, 2.07449, 2.24970, 2.43970, 2.64575, 2.86920, 3.11153, 3.37432, 3.65931,
 3.96836, 4.30352, 4.66698, 5.06114, 5.48859, 5.95214, 6.45484, 7.00000}
```

In[341]:=
```
eqs25 = Table[N[oct^(n / 25), 6], {n, 0, 25}]
```

Out[341]=
```
{1.00000, 1.08095, 1.16844, 1.26302, 1.36526, 1.47577, 1.59523, 1.72436,
 1.86394, 2.01482, 2.17791, 2.35420, 2.54476, 2.75075, 2.97341, 3.21410, 3.47426,
 3.75549, 4.05948, 4.38808, 4.74328, 5.12722, 5.54225, 5.99087, 6.47581, 7.00000}
```

In[342]:=
```
eqs26 = Table[N[oct^(n / 26), 6], {n, 0, 26}]
```

Out[342]=
```
{1.00000, 1.07771, 1.16147, 1.25173, 1.34901, 1.45385, 1.56683, 1.68860, 1.81983,
 1.96125, 2.11367, 2.27794, 2.45496, 2.64575, 2.85136, 3.07296, 3.31177, 3.56914,
 3.84652, 4.14545, 4.46761, 4.81481, 5.18899, 5.59225, 6.02685, 6.49523, 7.00000}
```

In[343]:=
```
eqs26 = Table[N[oct^(n / 26), 6], {n, 0, 26}]
```

Out[343]=
```
{1.00000, 1.07771, 1.16147, 1.25173, 1.34901, 1.45385, 1.56683, 1.68860, 1.81983,
 1.96125, 2.11367, 2.27794, 2.45496, 2.64575, 2.85136, 3.07296, 3.31177, 3.56914,
 3.84652, 4.14545, 4.46761, 4.81481, 5.18899, 5.59225, 6.02685, 6.49523, 7.00000}
```

In[344]:=
```
eqs27 = Table[N[oct^(n / 27), 6], {n, 0, 27}]
```

Out[344]=
```
{1.00000, 1.07473, 1.15505, 1.24137, 1.33413, 1.43384, 1.54099, 1.65615, 1.77992, 1.91293,
 2.05589, 2.20953, 2.37465, 2.55211, 2.74283, 2.94781, 3.16810, 3.40486, 3.65931,
 3.93277, 4.22667, 4.54254, 4.88201, 5.24685, 5.63895, 6.06036, 6.51326, 7.00000}
```

In[345]:=
```
eqs28 = Table[N[oct^(n / 28), 6], {n, 0, 28}]
```

Out[345]=
```
{1.00000, 1.07197, 1.14912, 1.23182, 1.32047, 1.41550, 1.51737, 1.62658, 1.74364, 1.86913,
 2.00364, 2.14784, 2.30242, 2.46812, 2.64575, 2.83616, 3.04028, 3.25908, 3.49363, 3.74507,
 4.01459, 4.30352, 4.61324, 4.94524, 5.30115, 5.68266, 6.09164, 6.53004, 7.00000}
```

In[346]:=
```
eqs29 = Table[N[oct^(n / 29), 6], {n, 0, 29}]
```

Out[346]=
```
{1.00000, 1.06940, 1.14362, 1.22299, 1.30787, 1.39864, 1.49571, 1.59952, 1.71053, 1.82924,
 1.95620, 2.09197, 2.23715, 2.39242, 2.55846, 2.73602, 2.92591, 3.12898, 3.34614, 3.57837,
 3.82672, 4.09230, 4.37632, 4.68005, 5.00485, 5.35221, 5.72366, 6.12090, 6.54571, 7.00000}
```

In[347]:=
```
eqs30 = Table[N[oct^(n / 30), 6], {n, 0, 30}]
```

Out[347]=
```
{1.00000, 1.06701, 1.13852, 1.21481, 1.29622, 1.38309, 1.47577,
 1.57467, 1.68019, 1.79279, 1.91293, 2.04112, 2.17791, 2.32386, 2.47959,
 2.64575, 2.82305, 3.01224, 3.21410, 3.42948, 3.65931, 3.90453, 4.16619,
 4.44538, 4.74328, 5.06114, 5.40031, 5.76220, 6.14834, 6.56037, 7.00000}
```

In[348]:=
```
eqs31 = Table[N[oct^(n / 31), 6], {n, 0, 31}]
```

Out[348]=
```
{1.00000, 1.06478, 1.13376, 1.20721, 1.28542, 1.36869, 1.45736, 1.55177,
 1.65230, 1.75935, 1.87332, 1.99468, 2.12390, 2.26150, 2.40800, 2.56400,
 2.73011, 2.90697, 3.09530, 3.29582, 3.50933, 3.73668, 3.97875, 4.23651,
 4.51096, 4.80320, 5.11437, 5.44569, 5.79848, 6.17413, 6.57411, 7.00000}
```

In[349]:=
```
eqs32 = Table[N[oct^(n / 32), 6], {n, 0, 32}]
```

Out[349]=
```
{1.00000, 1.06270, 1.12932, 1.20013, 1.27537, 1.35533, 1.44031, 1.53061,
 1.62658, 1.72856, 1.83693, 1.95210, 2.07449, 2.20456, 2.34277, 2.48966,
 2.64575, 2.81163, 2.98791, 3.17524, 3.37432, 3.58588, 3.81070, 4.04962, 4.30352,
 4.57333, 4.86007, 5.16478, 5.48859, 5.83271, 6.19840, 6.58702, 7.00000}
```

In[350]:=
```
eqs33 = Table[N[oct^(n / 33), 6], {n, 0, 33}]
```

Out[350]=
```
{1.00000, 1.06074, 1.12517, 1.19351, 1.26601, 1.34290, 1.42447, 1.51100,
 1.60277, 1.70013, 1.80339, 1.91293, 2.02912, 2.15237, 2.28311, 2.42178, 2.56888,
 2.72492, 2.89043, 3.06600, 3.25223, 3.44977, 3.65931, 3.88157, 4.11734, 4.36743,
 4.63271, 4.91410, 5.21258, 5.52920, 5.86504, 6.22128, 6.59917, 7.00000}
```

In[351]:=
```
eqs34 = Table[N[oct^(n / 34), 6], {n, 0, 34}]
```

Out[351]=
```
{1.00000, 1.05890, 1.12127, 1.18732, 1.25725, 1.33131, 1.40973, 1.49276,
 1.58069, 1.67380, 1.77239, 1.87678, 1.98733, 2.10439, 2.22834, 2.35959, 2.49858,
 2.64575, 2.80159, 2.96661, 3.14135, 3.32638, 3.52231, 3.72979, 3.94948, 4.18211,
 4.42845, 4.68929, 4.96550, 5.25798, 5.56769, 5.89563, 6.24290, 6.61062, 7.00000}
```

In[352]:=
```
eqs35 = Table[N[oct^(n / 35), 6], {n, 0, 35}]
```

Out[352]=
```
{1.00000, 1.05717, 1.11761, 1.18151, 1.24906, 1.32047, 1.39596, 1.47577, 1.56015,
 1.64934, 1.74364, 1.84333, 1.94871, 2.06012, 2.17791, 2.30242, 2.43406, 2.57322,
 2.72033, 2.87586, 3.04028, 3.21410, 3.39785, 3.59211, 3.79748, 4.01459, 4.24411,
 4.48676, 4.74328, 5.01446, 5.30115, 5.60422, 5.92463, 6.26335, 6.62144, 7.00000}
```

In[353]:=
```
eqs36 = Table[N[oct^(n / 36), 6], {n, 0, 36}]
```

Out[353]=
```
{1.00000, 1.05554, 1.11417, 1.17605, 1.24137, 1.31031, 1.38309, 1.45991, 1.54099, 1.62658,
 1.71692, 1.81228, 1.91293, 2.01918, 2.13132, 2.24970, 2.37465, 2.50654, 2.64575,
 2.79270, 2.94781, 3.11153, 3.28435, 3.46676, 3.65931, 3.86255, 4.07707, 4.30352,
 4.54254, 4.79483, 5.06114, 5.34224, 5.63895, 5.95214, 6.28273, 6.63167, 7.00000}
```

In[354]:=
```
eqs37 = Table[N[oct^(n/37), 6], {n, 0, 37}]
```

Out[354]=
```
{1.00000, 1.05400, 1.11092, 1.17090, 1.23413, 1.30078, 1.37102, 1.44505, 1.52308, 1.60533,
 1.69202, 1.78339, 1.87969, 1.98119, 2.08817, 2.20094, 2.31979, 2.44505, 2.57709, 2.71625,
 2.86292, 3.01752, 3.18047, 3.35221, 3.53323, 3.72402, 3.92512, 4.13707, 4.36047,
 4.59594, 4.84412, 5.10570, 5.38140, 5.67200, 5.97828, 6.30111, 6.64137, 7.00000}
```

In[355]:=
```
eqs38 = Table[N[oct^(n/38), 6], {n, 0, 38}]
```

Out[355]=
```
{1.00000, 1.05254, 1.10784, 1.16605, 1.22732, 1.29181, 1.35968, 1.43112, 1.50631, 1.58546,
 1.66876, 1.75644, 1.84873, 1.94586, 2.04810, 2.15571, 2.26898, 2.38820, 2.51368, 2.64575,
 2.78476, 2.93108, 3.08509, 3.24718, 3.41780, 3.59737, 3.78639, 3.98533, 4.19473, 4.41513,
 4.64711, 4.89128, 5.14827, 5.41877, 5.70349, 6.00316, 6.31858, 6.65057, 7.00000}
```

In[356]:=
```
eqs39 = Table[N[oct^(n/39), 6], {n, 0, 39}]
```

Out[356]=
```
{1.00000, 1.05116, 1.10494, 1.16147, 1.22089, 1.28335, 1.34901, 1.41803, 1.49057, 1.56683,
 1.64699, 1.73125, 1.81983, 1.91293, 2.01080, 2.11367, 2.22181, 2.33548, 2.45496, 2.58056,
 2.71259, 2.85136, 2.99724, 3.15058, 3.31177, 3.48120, 3.65931, 3.84652, 4.04331, 4.25017,
 4.46761, 4.69618, 4.93644, 5.18899, 5.45446, 5.73352, 6.02685, 6.33519, 6.65930, 7.00000}
```

In[357]:=
```
eqs40 = Table[N[oct^(n/40), 6], {n, 0, 40}]
```

Out[357]=
```
{1.00000, 1.04985, 1.10219, 1.15713, 1.21481, 1.27537, 1.33895, 1.40570,
 1.47577, 1.54934, 1.62658, 1.70766, 1.79279, 1.88216, 1.97599, 2.07449,
 2.17791, 2.28648, 2.40046, 2.52012, 2.64575, 2.77764, 2.91611, 3.06148,
 3.21410, 3.37432, 3.54253, 3.71913, 3.90453, 4.09917, 4.30352, 4.51805, 4.74328,
 4.97973, 5.22797, 5.48859, 5.76220, 6.04945, 6.35101, 6.66762, 7.00000}
```

In[358]:=
```
eqs41 = Table[N[oct^(n/41), 6], {n, 0, 41}]
```

Out[358]=
```
{1.00000, 1.04861, 1.09957, 1.15302, 1.20906, 1.26783, 1.32945, 1.39407,
 1.46183, 1.53288, 1.60739, 1.68552, 1.76744, 1.85335, 1.94344, 2.03790,
 2.13695, 2.24082, 2.34973, 2.46394, 2.58371, 2.70929, 2.84097, 2.97906, 3.12386,
 3.27570, 3.43491, 3.60187, 3.77694, 3.96052, 4.15302, 4.35488, 4.56656, 4.78852,
 5.02126, 5.26532, 5.52125, 5.78961, 6.07102, 6.36610, 6.67553, 7.00000}
```

In[359]:=
```
eqs42 = Table[N[oct^(n/42), 6], {n, 0, 42}]
```

Out[359]=
```
{1.00000, 1.04742, 1.09709, 1.14912, 1.20361, 1.26069, 1.32047, 1.38309,
 1.44868, 1.51737, 1.58933, 1.66470, 1.74364, 1.82632, 1.91293, 2.00364, 2.09866,
 2.19818, 2.30242, 2.41161, 2.52597, 2.64575, 2.77122, 2.90263, 3.04028, 3.18445,
 3.33546, 3.49363, 3.65931, 3.83283, 4.01459, 4.20497, 4.40437, 4.61324, 4.83200,
 5.06114, 5.30115, 5.55253, 5.81584, 6.09164, 6.38051, 6.68308, 7.00000}
```

In[360]:=
```
eqs43 = Table[N[oct^(n/43), 6], {n, 0, 43}]
```

Out[360]=
```
{1.00000, 1.04629, 1.09473, 1.14541, 1.19843, 1.25391, 1.31196, 1.37270,
 1.43624, 1.50273, 1.57230, 1.64508, 1.72124, 1.80092, 1.88429, 1.97152, 2.06279,
 2.15828, 2.25820, 2.36274, 2.47212, 2.58656, 2.70630, 2.83158, 2.96267, 3.09982,
 3.24332, 3.39346, 3.55056, 3.71492, 3.88690, 4.06684, 4.25510, 4.45209, 4.65819,
 4.87383, 5.09946, 5.33553, 5.58253, 5.84096, 6.11136, 6.39427, 6.69028, 7.00000}
```

In[361]:=
```
eqs44 = Table[N[oct^(n / 44), 6], {n, 0, 44}]
```

Out[361]=
```
{1.00000, 1.04522, 1.09248, 1.14188, 1.19351, 1.24748, 1.30389, 1.36285, 1.42447,
 1.48888, 1.55621, 1.62658, 1.70013, 1.77700, 1.85735, 1.94134, 2.02912, 2.12088,
 2.21678, 2.31701, 2.42178, 2.53129, 2.64575, 2.76539, 2.89043, 3.02113, 3.15774,
 3.30052, 3.44977, 3.60576, 3.76880, 3.93922, 4.11734, 4.30352, 4.49811, 4.70151,
 4.91410, 5.13630, 5.36855, 5.61131, 5.86504, 6.13024, 6.40744, 6.69717, 7.00000}
```