In[409]:=

MUSICAL NUMBERS FOR ALL OCTAVES

Out[409]= FOR MUSICAL NUMBERS

Out[410]= ALL OCTAVES

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

In[411]:=
```
oct = 9
```
Out[411]= 9

In[412]:=
```
eqtwo = Table[N[oct^(y/2)], {y, 1, 2}]
```
Out[412]= {3., 9.}

In[413]:=
```
eqthree = Table[N[oct^(y/3)], {y, 1, 3}]
```
Out[413]= {2.08008, 4.32675, 9.}

In[414]:=
```
eqfour = Table[N[oct^(y / 4)], {y, 1, 4}]
```
Out[414]= {1.73205, 3., 5.19615, 9.}

In[415]:=
```
eqfive = Table[N[oct^(y / 5)], {y, 1, 5}]
```
Out[415]= {1.55185, 2.40822, 3.73719, 5.79955, 9.}

In[416]:=
```
eqsix = Table[N[oct^(y / 6)], {y, 1, 6}]
```
Out[416]= {1.44225, 2.08008, 3., 4.32675, 6.24025, 9.}

In[417]:=
```
eqseven = Table[N[oct^(y / 7)], {y, 1, 7}]
```
Out[417]= {1.36874, 1.87344, 2.56425, 3.50979, 4.80399, 6.5754, 9.}

In[418]:=
```
eqeight = Table[N[oct^(y/8)], {y, 1, 8}]
```
Out[418]= {1.31607, 1.73205, 2.27951, 3., 3.94822, 5.19615, 6.83852, 9.}

In[419]:=
```
eqnine = Table[N[oct^(y/9)], {y, 1, 9}]
```
Out[419]= {1.27652, 1.6295, 2.08008, 2.65526, 3.38949, 4.32675, 5.52317, 7.05043, 9.}

In[420]:=
```
eqten = Table[N[oct^(y/10)], {y, 1, 10}]
```
Out[420]= {1.24573, 1.55185, 1.93318, 2.40822, 3., 3.73719, 4.65554, 5.79955, 7.22467, 9.}

In[421]:=
```
eqeleven = Table[N[oct^(y/11)], {y, 1, 11}]
```
Out[421]= {1.22109, 1.49107, 1.82074, 2.2233, 2.71485, 3.31509, 4.04804, 4.94304, 6.03593, 7.37044, 9.}

In[422]:=
```
eqtwelve = Table[N[oct^(y/12)], {y, 1, 12}]
```

Out[422]=
```
{1.20094, 1.44225, 1.73205, 2.08008, 2.49805,
 3., 3.60281, 4.32675, 5.19615, 6.24025, 7.49415, 9.}
```

In[423]:=
```
eqthirteen = Table[N[oct^(n/13), 6], {n, 0, 13}]
```

Out[423]=
```
{1.00000, 1.18414, 1.40219, 1.66039, 1.96613, 2.32818,
 2.75689, 3.26455, 3.86568, 4.57751, 5.42042, 6.41854, 7.60045, 9.00000}
```

In[424]:=
```
eqfourteen = Table[N[oct^(n/14), 6], {n, 0, 14}]
```

Out[424]=
```
{1.00000, 1.16993, 1.36874, 1.60133, 1.87344, 2.19180, 2.56425,
 3.00000, 3.50979, 4.10621, 4.80399, 5.62033, 6.57540, 7.69276, 9.00000}
```

In[425]:=
```
eqfifteen = Table[N[oct^(n/15), 6], {n, 0, 15}]
```

Out[425]=
```
{1.00000, 1.15775, 1.34039, 1.55185, 1.79665, 2.08008, 2.40822, 2.78813,
 3.22797, 3.73719, 4.32675, 5.00931, 5.79955, 6.71445, 7.77367, 9.00000}
```

In[426]:=
```
eqsixteen = Table[N[oct^(n/16), 6], {n, 0, 16}]
```

Out[426]=
```
{1.00000, 1.14720, 1.31607, 1.50980, 1.73205, 1.98701, 2.27951, 2.61506,
 3.00000, 3.44161, 3.94822, 4.52941, 5.19615, 5.96104, 6.83852, 7.84517, 9.00000}
```

In[427]:=
```
eq17 = Table[N[oct^(n/17), 6], {n, 0, 17}]
```

Out[427]=
```
{1.00000, 1.13797, 1.29498, 1.47365, 1.67698, 1.90836, 2.17166, 2.47129, 2.81226,
 3.20027, 3.64183, 4.14430, 4.71610, 5.36679, 6.10727, 6.94990, 7.90880, 9.00000}
```

In[428]:=
```
eq18 = Table[N[oct^(n/18), 6], {n, 0, 18}]
```

Out[428]=
```
{1.00000, 1.12983, 1.27652, 1.44225, 1.62950, 1.84106, 2.08008, 2.35014, 2.65526, 3.00000,
 3.38949, 3.82955, 4.32675, 4.88849, 5.52317, 6.24025, 7.05043, 7.96579, 9.00000}
```

In[429]:=
```
eq19 = Table[N[oct^(n/19), 6], {n, 0, 19}]
```

Out[429]=
```
{1.00000, 1.12260, 1.26022, 1.41472, 1.58816, 1.78286, 2.00143, 2.24679, 2.52224, 2.83145,
 3.17858, 3.56826, 4.00571, 4.49679, 5.04808, 5.66695, 6.36169, 7.14161, 8.01714, 9.00000}
```

In[430]:=
```
eq20 = Table[N[oct^(n/20), 6], {n, 0, 20}]
```

Out[430]=
```
{1.00000, 1.11612, 1.24573, 1.39039, 1.55185, 1.73205,
 1.93318, 2.15767, 2.40822, 2.68788, 3.00000, 3.34837, 3.73719,
 4.17117, 4.65554, 5.19615, 5.79955, 6.47301, 7.22467, 8.06363, 9.00000}
```

In[431]:=
```
eq21 = Table[N[oct^(n/21), 6], {n, 0, 21}]
```

Out[431]=
```
{1.00000, 1.11030, 1.23276, 1.36874, 1.51971, 1.68733,
 1.87344, 2.08008, 2.30952, 2.56425, 2.84709, 3.16112, 3.50979, 3.89692,
 4.32675, 4.80399, 5.33386, 5.92219, 6.57540, 7.30066, 8.10592, 9.00000}
```

In[432]:=
```
eq22 = Table[N[oct^(n/22), 6], {n, 0, 22}]
```

Out[432]=
```
{1.00000, 1.10503, 1.22109, 1.34935, 1.49107, 1.64768, 1.82074,
 2.01198, 2.22330, 2.45681, 2.71485, 3.00000, 3.31509, 3.66328, 4.04804,
 4.47322, 4.94304, 5.46222, 6.03593, 6.66989, 7.37044, 8.14456, 9.00000}
```

In[433]:=
```
eq23 = Table[N[oct^(n / 23), 6], {n, 0, 23}]
```

Out[433]=
```
{1.00000, 1.10024, 1.21054, 1.33188, 1.46540, 1.61229, 1.77392, 1.95174,
 2.14739, 2.36265, 2.59949, 2.86007, 3.14677, 3.46222, 3.80928, 4.19114,
 4.61127, 5.07352, 5.58211, 6.14168, 6.75735, 7.43472, 8.18001, 9.00000}
```

In[434]:=
```
eqs24 = Table[N[oct^(n / 24), 6], {n, 0, 24}]
```

Out[434]=
```
{1.00000, 1.09587, 1.20094, 1.31607, 1.44225, 1.58052, 1.73205, 1.89811,
 2.08008, 2.27951, 2.49805, 2.73754, 3.00000, 3.28762, 3.60281, 3.94822, 4.32675,
 4.74157, 5.19615, 5.69432, 6.24025, 6.83852, 7.49415, 8.21263, 9.00000}
```

In[435]:=
```
eqs25 = Table[N[oct^(n / 25), 6], {n, 0, 25}]
```

Out[435]=
```
{1.00000, 1.09187, 1.19217, 1.30169, 1.42128, 1.55185, 1.69441, 1.85007,
 2.02003, 2.20560, 2.40822, 2.62946, 2.87102, 3.13477, 3.42275, 3.73719, 4.08052,
 4.45538, 4.86468, 5.31159, 5.79955, 6.33233, 6.91406, 7.54924, 8.24276, 9.00000}
```

In[436]:=
```
eqs26 = Table[N[oct^(n / 26), 6], {n, 0, 26}]
```

Out[436]=
```
{1.00000, 1.08818, 1.18414, 1.28856, 1.40219, 1.52584, 1.66039, 1.80681, 1.96613,
 2.13951, 2.32818, 2.53348, 2.75689, 3.00000, 3.26455, 3.55242, 3.86568, 4.20657,
 4.57751, 4.98117, 5.42042, 5.89840, 6.41854, 6.98454, 7.60045, 8.27067, 9.00000}
```

In[437]:=
```
eqs26 = Table[N[oct^(n / 26), 6], {n, 0, 26}]
```

Out[437]=
```
{1.00000, 1.08818, 1.18414, 1.28856, 1.40219, 1.52584, 1.66039, 1.80681, 1.96613,
 2.13951, 2.32818, 2.53348, 2.75689, 3.00000, 3.26455, 3.55242, 3.86568, 4.20657,
 4.57751, 4.98117, 5.42042, 5.89840, 6.41854, 6.98454, 7.60045, 8.27067, 9.00000}
```

In[438]:=
```
eqs27 = Table[N[oct^(n / 27), 6], {n, 0, 27}]
```

Out[438]=
```
{1.00000, 1.08478, 1.17675, 1.27652, 1.38474, 1.50214, 1.62950, 1.76765, 1.91751, 2.08008,
 2.25644, 2.44774, 2.65526, 2.88038, 3.12459, 3.38949, 3.67686, 3.98859, 4.32675,
 4.69358, 5.09151, 5.52317, 5.99144, 6.49940, 7.05043, 7.64818, 8.29660, 9.00000}
```

In[439]:=
```
eqs28 = Table[N[oct^(n / 28), 6], {n, 0, 28}]
```

Out[439]=
```
{1.00000, 1.08163, 1.16993, 1.26544, 1.36874, 1.48047, 1.60133, 1.73205, 1.87344, 2.02638,
 2.19180, 2.37072, 2.56425, 2.77358, 3.00000, 3.24490, 3.50979, 3.79631, 4.10621, 4.44142,
 4.80399, 5.19615, 5.62033, 6.07914, 6.57540, 7.11217, 7.69276, 8.32075, 9.00000}
```

In[440]:=
```
eqs29 = Table[N[oct^(n / 29), 6], {n, 0, 29}]
```

Out[440]=
```
{1.00000, 1.07871, 1.16362, 1.25521, 1.35400, 1.46058, 1.57554, 1.69955, 1.83332, 1.97763,
 2.13329, 2.30120, 2.48233, 2.67771, 2.88848, 3.11583, 3.36108, 3.62563, 3.91101, 4.21884,
 4.55091, 4.90911, 5.29551, 5.71233, 6.16195, 6.64696, 7.17014, 7.73451, 8.34329, 9.00000}
```

In[441]:=
```
eqs30 = Table[N[oct^(n / 30), 6], {n, 0, 30}]
```

Out[441]=
```
{1.00000, 1.07599, 1.15775, 1.24573, 1.34039, 1.44225, 1.55185,
 1.66977, 1.79665, 1.93318, 2.08008, 2.23815, 2.40822, 2.59122, 2.78813,
 3.00000, 3.22797, 3.47326, 3.73719, 4.02118, 4.32675, 4.65554, 5.00931,
 5.38996, 5.79955, 6.24025, 6.71445, 7.22467, 7.77367, 8.36439, 9.00000}
```

In[442]:=
```
eqs31 = Table[N[oct^(n / 31), 6], {n, 0, 31}]
```

Out[442]=
```
{1.00000, 1.07345, 1.15230, 1.23693, 1.32779, 1.42531, 1.53000, 1.64238,
 1.76302, 1.89251, 2.03152, 2.18073, 2.34091, 2.51285, 2.69742, 2.89554,
 3.10822, 3.33652, 3.58159, 3.84466, 4.12706, 4.43019, 4.75559, 5.10489,
 5.47985, 5.88234, 6.31440, 6.77820, 7.27606, 7.81049, 8.38418, 9.00000}
```

In[443]:=
```
eqs32 = Table[N[oct^(n / 32), 6], {n, 0, 32}]
```

Out[443]=
```
{1.00000, 1.07108, 1.14720, 1.22874, 1.31607, 1.40961, 1.50980, 1.61711,
 1.73205, 1.85516, 1.98701, 2.12824, 2.27951, 2.44152, 2.61506, 2.80092,
 3.00000, 3.21323, 3.44161, 3.68622, 3.94822, 4.22884, 4.52941, 4.85134, 5.19615,
 5.56547, 5.96104, 6.38472, 6.83852, 7.32457, 7.84517, 8.40277, 9.00000}
```

In[444]:=
```
eqs33 = Table[N[oct^(n / 33), 6], {n, 0, 33}]
```

Out[444]=
```
{1.00000, 1.06885, 1.14244, 1.22109, 1.30517, 1.39503, 1.49107, 1.59373,
 1.70346, 1.82074, 1.94610, 2.08008, 2.22330, 2.37637, 2.53998, 2.71485, 2.90177,
 3.10155, 3.31509, 3.54334, 3.78729, 4.04804, 4.32675, 4.62464, 4.94304, 5.28337,
 5.64713, 6.03593, 6.45149, 6.89567, 7.37044, 7.87788, 8.42027, 9.00000}
```

In[445]:=
```
eqs34 = Table[N[oct^(n / 34), 6], {n, 0, 34}]
```

Out[445]=
```
{1.00000, 1.06676, 1.13797, 1.21394, 1.29498, 1.38143, 1.47365, 1.57203,
 1.67698, 1.78893, 1.90836, 2.03576, 2.17166, 2.31663, 2.47129, 2.63627, 2.81226,
 3.00000, 3.20027, 3.41392, 3.64183, 3.88495, 4.14430, 4.42096, 4.71610, 5.03094,
 5.36679, 5.72507, 6.10727, 6.51497, 6.94990, 7.41386, 7.90880, 8.43678, 9.00000}
```

In[446]:=
```
eqs35 = Table[N[oct^(n / 35), 6], {n, 0, 35}]
```

Out[446]=
```
{1.00000, 1.06479, 1.13378, 1.20724, 1.28545, 1.36874, 1.45742, 1.55185, 1.65239,
 1.75945, 1.87344, 1.99482, 2.12407, 2.26169, 2.40822, 2.56425, 2.73039, 2.90730,
 3.09566, 3.29623, 3.50979, 3.73719, 3.97933, 4.23715, 4.51167, 4.80399, 5.11524,
 5.44666, 5.79955, 6.17530, 6.57540, 7.00142, 7.45505, 7.93806, 8.45237, 9.00000}
```

In[447]:=
```
eqs36 = Table[N[oct^(n / 36), 6], {n, 0, 36}]
```

Out[447]=
```
{1.00000, 1.06294, 1.12983, 1.20094, 1.27652, 1.35686, 1.44225, 1.53302, 1.62950, 1.73205,
 1.84106, 1.95692, 2.08008, 2.21099, 2.35014, 2.49805, 2.65526, 2.82237, 3.00000,
 3.18881, 3.38949, 3.60281, 3.82955, 4.07057, 4.32675, 4.59905, 4.88849, 5.19615,
 5.52317, 5.87077, 6.24025, 6.63298, 7.05043, 7.49415, 7.96579, 8.46712, 9.00000}
```

In[448]:=
```
eqs37 = Table[N[oct^(n/37), 6], {n, 0, 37}]
```

Out[448]=
```
{1.00000, 1.06118, 1.12611, 1.19501, 1.26812, 1.34571, 1.42805, 1.51542, 1.60814, 1.70653,
 1.81094, 1.92174, 2.03931, 2.16409, 2.29649, 2.43700, 2.58610, 2.74433, 2.91223, 3.09041,
 3.27949, 3.48014, 3.69307, 3.91902, 4.15880, 4.41325, 4.68327, 4.96980, 5.27387,
 5.59654, 5.93896, 6.30232, 6.68792, 7.09710, 7.53133, 7.99212, 8.48110, 9.00000}
```

In[449]:=
```
eqs38 = Table[N[oct^(n/38), 6], {n, 0, 38}]
```

Out[449]=
```
{1.00000, 1.05953, 1.12260, 1.18942, 1.26022, 1.33524, 1.41472, 1.49893, 1.58816, 1.68269,
 1.78286, 1.88898, 2.00143, 2.12056, 2.24679, 2.38054, 2.52224, 2.67238, 2.83145, 3.00000,
 3.17858, 3.36779, 3.56826, 3.78066, 4.00571, 4.24415, 4.49679, 4.76447, 5.04808, 5.34857,
 5.66695, 6.00428, 6.36169, 6.74038, 7.14161, 7.56672, 8.01714, 8.49436, 9.00000}
```

In[450]:=
```
eqs39 = Table[N[oct^(n/39), 6], {n, 0, 39}]
```

Out[450]=
```
{1.00000, 1.05796, 1.11927, 1.18414, 1.25277, 1.32538, 1.40219, 1.48345, 1.56943, 1.66039,
 1.75662, 1.85843, 1.96613, 2.08008, 2.20064, 2.32818, 2.46311, 2.60586, 2.75689, 2.91667,
 3.08571, 3.26455, 3.45375, 3.65391, 3.86568, 4.08972, 4.32675, 4.57751, 4.84281, 5.12348,
 5.42042, 5.73456, 6.06692, 6.41854, 6.79053, 7.18409, 7.60045, 8.04094, 8.50697, 9.00000}
```

In[451]:=
```
eqs40 = Table[N[oct^(n/40), 6], {n, 0, 40}]
```

Out[451]=
```
{1.00000, 1.05647, 1.11612, 1.17915, 1.24573, 1.31607, 1.39039, 1.46890,
 1.55185, 1.63947, 1.73205, 1.82986, 1.93318, 2.04234, 2.15767, 2.27951,
 2.40822, 2.54421, 2.68788, 2.83965, 3.00000, 3.16940, 3.34837, 3.53744,
 3.73719, 3.94822, 4.17117, 4.40670, 4.65554, 4.91842, 5.19615, 5.48957, 5.79955,
 6.12703, 6.47301, 6.83852, 7.22467, 7.63263, 8.06363, 8.51896, 9.00000}
```

In[452]:=
```
eqs41 = Table[N[oct^(n/41), 6], {n, 0, 41}]
```

Out[452]=
```
{1.00000, 1.05505, 1.11314, 1.17442, 1.23907, 1.30729, 1.37926, 1.45519,
 1.53530, 1.61982, 1.70900, 1.80309, 1.90235, 2.00708, 2.11758, 2.23415,
 2.35715, 2.48692, 2.62383, 2.76828, 2.92068, 3.08147, 3.25112, 3.43010, 3.61894,
 3.81817, 4.02837, 4.25014, 4.48413, 4.73099, 4.99144, 5.26624, 5.55616, 5.86204,
 6.18476, 6.52525, 6.88449, 7.26350, 7.66337, 8.08526, 8.53038, 9.00000}
```

In[453]:=
```
eqs42 = Table[N[oct^(n/42), 6], {n, 0, 42}]
```

Out[453]=
```
{1.00000, 1.05371, 1.11030, 1.16993, 1.23276, 1.29897, 1.36874, 1.44225,
 1.51971, 1.60133, 1.68733, 1.77795, 1.87344, 1.97406, 2.08008, 2.19180, 2.30952,
 2.43355, 2.56425, 2.70197, 2.84709, 3.00000, 3.16112, 3.33090, 3.50979, 3.69829,
 3.89692, 4.10621, 4.32675, 4.55913, 4.80399, 5.06200, 5.33386, 5.62033, 5.92219,
 6.24025, 6.57540, 6.92855, 7.30066, 7.69276, 8.10592, 8.54127, 9.00000}
```

In[454]:=
```
eqs43 = Table[N[oct^(n/43), 6], {n, 0, 43}]
```

Out[454]=
```
{1.00000, 1.05243, 1.10760, 1.16567, 1.22678, 1.29110, 1.35878, 1.43002,
 1.50499, 1.58389, 1.66693, 1.75432, 1.84629, 1.94309, 2.04495, 2.15216, 2.26499,
 2.38374, 2.50871, 2.64023, 2.77865, 2.92432, 3.07763, 3.23898, 3.40879, 3.58750,
 3.77558, 3.97352, 4.18184, 4.40108, 4.63181, 4.87464, 5.13020, 5.39915, 5.68221,
 5.98011, 6.29362, 6.62357, 6.97082, 7.33628, 7.72089, 8.12567, 8.55167, 9.00000}
```

In[455]:=
```
eqs44 = Table[N[oct^(n / 44), 6], {n, 0, 44}]
```

Out[455]=
```
{1.00000, 1.05120, 1.10503, 1.16161, 1.22109, 1.28362, 1.34935, 1.41844, 1.49107,
 1.56742, 1.64768, 1.73205, 1.82074, 1.91397, 2.01198, 2.11500, 2.22330, 2.33714,
 2.45681, 2.58261, 2.71485, 2.85387, 3.00000, 3.15361, 3.31509, 3.48484, 3.66328,
 3.85086, 4.04804, 4.25532, 4.47322, 4.70227, 4.94304, 5.19615, 5.46222, 5.74191,
 6.03593, 6.34499, 6.66989, 7.01142, 7.37044, 7.74784, 8.14456, 8.56160, 9.00000}
```