

MUSICAL NUMBERS FOR ALL OCTAVES

In[268]:=

Out[268]= FOR MUSICAL NUMBERS

Out[269]= ALL OCTAVES

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

In[270]:= **oct = 6**

Out[270]= 6

In[271]:= **eqtwo = Table[N[oct^(y/2)], {y, 1, 2}]**

Out[271]= {2.44949, 6.}

In[272]:= **eqthree = Table[N[oct^(y/3)], {y, 1, 3}]**

Out[272]= {1.81712, 3.30193, 6.}

In[273]:= **eqfour = Table[N[oct^(y/4)], {y, 1, 4}]**

Out[273]= {1.56508, 2.44949, 3.83366, 6.}

In[274]:= **eqfive = Table[N[oct^(y/5)], {y, 1, 5}]**

Out[274]= {1.43097, 2.04767, 2.93016, 4.19296, 6.}

In[275]:= **eqsix = Table[N[oct^(y/6)], {y, 1, 6}]**

Out[275]= {1.34801, 1.81712, 2.44949, 3.30193, 4.45102, 6.}

In[276]:= **eqseven = Table[N[oct^(y/7)], {y, 1, 7}]**

Out[276]= {1.29171, 1.66851, 2.15523, 2.78393, 3.59602, 4.64501, 6.}

In[277]:= **eqeight = Table[N[oct^(y/8)], {y, 1, 8}]**

Out[277]= {1.25103, 1.56508, 1.95797, 2.44949, 3.06439, 3.83366, 4.79604, 6.}

In[278]:= **eqnine = Table[N[oct^(y/9)], {y, 1, 9}]**

Out[278]= {1.22028, 1.4891, 1.81712, 2.2174, 2.70587, 3.30193, 4.02929, 4.91688, 6.}

In[279]:= **eqten = Table[N[oct^(y/10)], {y, 1, 10}]**

Out[279]= {1.19623, 1.43097, 1.71177, 2.04767, 2.44949, 2.93016, 3.50514, 4.19296, 5.01575, 6.}

In[280]:= **eqeleven = Table[N[oct^(y/11)], {y, 1, 11}]**

Out[280]= {1.1769, 1.3851, 1.63013, 1.91851, 2.2579, 2.65733, 3.12743, 3.68068, 4.33181, 5.09812, 6.}

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In[281]:= eqtwelve = Table[N[oct^(y/12)], {y, 1, 12}]
Out[281]= {1.16104, 1.34801, 1.56508, 1.81712, 2.10974,
          2.44949, 2.84395, 3.30193, 3.83366, 4.45102, 5.1678, 6.}

In[282]:= eqthirteen = Table[N[oct^(n/13)], {n, 0, 13}]
Out[282]= {1.00000, 1.14778, 1.31739, 1.51208, 1.73553, 1.99200,
          2.28637, 2.62425, 3.01205, 3.45716, 3.96806, 4.55445, 5.22749, 6.00000}

In[283]:= eqfourteen = Table[N[oct^(n/14)], {n, 0, 14}]
Out[283]= {1.00000, 1.13653, 1.29171, 1.46807, 1.66851, 1.89632, 2.15523,
          2.44949, 2.78393, 3.16403, 3.59602, 4.08700, 4.64501, 5.27921, 6.00000}

In[284]:= eqfifteen = Table[N[oct^(n/15)], {n, 0, 15}]
Out[284]= {1.00000, 1.12688, 1.26985, 1.43097, 1.61253, 1.81712, 2.04767, 2.30748,
          2.60024, 2.93016, 3.30193, 3.72087, 4.19296, 4.72496, 5.32445, 6.00000}

In[285]:= eqsixteen = Table[N[oct^(n/16)], {n, 0, 16}]
Out[285]= {1.00000, 1.11850, 1.25103, 1.39928, 1.56508, 1.75054, 1.95797, 2.18999,
          2.44949, 2.73974, 3.06439, 3.42751, 3.83366, 4.28793, 4.79604, 5.36435, 6.00000}

In[286]:= eq17 = Table[N[oct^(n/17)], {n, 0, 17}]
Out[286]= {1.00000, 1.11115, 1.23466, 1.37189, 1.52438, 1.69382, 1.88210, 2.09129, 2.32375,
          2.58204, 2.86904, 3.18794, 3.54228, 3.93602, 4.37351, 4.85964, 5.39980, 6.00000}

In[287]:= eq18 = Table[N[oct^(n/18)], {n, 0, 18}]
Out[287]= {1.00000, 1.10467, 1.22028, 1.34801, 1.48910, 1.64495, 1.81712, 2.00731, 2.21740, 2.44949,
          2.70587, 2.98908, 3.30193, 3.64752, 4.02929, 4.45102, 4.91688, 5.43151, 6.00000}

In[288]:= eq19 = Table[N[oct^(n/19)], {n, 0, 19}]
Out[288]= {1.00000, 1.09889, 1.20757, 1.32698, 1.45821, 1.60242, 1.76089, 1.93503, 2.12639, 2.33667,
          2.56775, 2.82169, 3.10073, 3.40737, 3.74433, 4.11462, 4.52153, 4.96868, 5.46004, 6.00000}

In[289]:= eq20 = Table[N[oct^(n/20)], {n, 0, 20}]
Out[289]= {1.00000, 1.09372, 1.19623, 1.30835, 1.43097, 1.56508,
          1.71177, 1.87220, 2.04767, 2.23959, 2.44949, 2.67906, 2.93016,
          3.20478, 3.50514, 3.83366, 4.19296, 4.58594, 5.01575, 5.48585, 6.00000}

In[290]:= eq21 = Table[N[oct^(n/21)], {n, 0, 21}]
Out[290]= {1.00000, 1.08907, 1.18607, 1.29171, 1.40676, 1.53205,
          1.66851, 1.81712, 1.97897, 2.15523, 2.34719, 2.55625, 2.78393, 3.03188,
          3.30193, 3.59602, 3.91631, 4.26513, 4.64501, 5.05873, 5.50930, 6.00000}

In[291]:= eq22 = Table[N[oct^(n/22)], {n, 0, 22}]
Out[291]= {1.00000, 1.08485, 1.17690, 1.27677, 1.38510, 1.50263, 1.63013,
          1.76845, 1.91851, 2.08130, 2.25790, 2.44949, 2.65733, 2.88281, 3.12743,
          3.39280, 3.68068, 3.99299, 4.33181, 4.69937, 5.09812, 5.53071, 6.00000}

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In[292]:= **eq23 = Table**[**N**[**oct**^(**n**/**23**), **6**], {**n**, **0**, **23**}]

Out[292]:= {1.00000, 1.08102, 1.16860, 1.26328, 1.36562, 1.47626, 1.59586, 1.72516,
1.86492, 2.01602, 2.17935, 2.35591, 2.54678, 2.75312, 2.97617, 3.21729,
3.47794, 3.75972, 4.06432, 4.39360, 4.74956, 5.13436, 5.55033, 6.00000}

In[293]:= **eqs24 = Table**[**N**[**oct**^(**n**/**24**), **6**], {**n**, **0**, **24**}]

Out[293]:= {1.00000, 1.07751, 1.16104, 1.25103, 1.34801, 1.45250, 1.56508, 1.68640,
1.81712, 1.95797, 2.10974, 2.27328, 2.44949, 2.63936, 2.84395, 3.06439, 3.30193,
3.55787, 3.83366, 4.13082, 4.45102, 4.79604, 5.16780, 5.56837, 6.00000}

In[294]:= **eqs25 = Table**[**N**[**oct**^(**n**/**25**), **6**], {**n**, **0**, **25**}]

Out[294]:= {1.00000, 1.07430, 1.15412, 1.23988, 1.33200, 1.43097, 1.53729, 1.65151,
1.77422, 1.90605, 2.04767, 2.19982, 2.36327, 2.53886, 2.72750, 2.93016, 3.14787,
3.38176, 3.63303, 3.90297, 4.19296, 4.50450, 4.83919, 5.19875, 5.58503, 6.00000}

In[295]:= **eqs26 = Table**[**N**[**oct**^(**n**/**26**), **6**], {**n**, **0**, **26**}]

Out[295]:= {1.00000, 1.07134, 1.14778, 1.22966, 1.31739, 1.41138, 1.51208, 1.61995, 1.73553,
1.85935, 1.99200, 2.13412, 2.28637, 2.44949, 2.62425, 2.81147, 3.01205, 3.22694,
3.45716, 3.70381, 3.96806, 4.25115, 4.55445, 4.87938, 5.22749, 5.60044, 6.00000}

In[296]:= **eqs26 = Table**[**N**[**oct**^(**n**/**26**), **6**], {**n**, **0**, **26**}]

Out[296]:= {1.00000, 1.07134, 1.14778, 1.22966, 1.31739, 1.41138, 1.51208, 1.61995, 1.73553,
1.85935, 1.99200, 2.13412, 2.28637, 2.44949, 2.62425, 2.81147, 3.01205, 3.22694,
3.45716, 3.70381, 3.96806, 4.25115, 4.55445, 4.87938, 5.22749, 5.60044, 6.00000}

In[297]:= **eqs27 = Table**[**N**[**oct**^(**n**/**27**), **6**], {**n**, **0**, **27**}]

Out[297]:= {1.00000, 1.06861, 1.14193, 1.22028, 1.30401, 1.39348, 1.48910, 1.59127, 1.70045, 1.81712,
1.94180, 2.07503, 2.21740, 2.36955, 2.53213, 2.70587, 2.89152, 3.08992, 3.30193,
3.52848, 3.77058, 4.02929, 4.30575, 4.60118, 4.91688, 5.25425, 5.61476, 6.00000}

In[298]:= **eqs28 = Table**[**N**[**oct**^(**n**/**28**), **6**], {**n**, **0**, **28**}]

Out[298]:= {1.00000, 1.06608, 1.13653, 1.21164, 1.29171, 1.37707, 1.46807, 1.56508, 1.66851, 1.77877,
1.89632, 2.02163, 2.15523, 2.29765, 2.44949, 2.61136, 2.78393, 2.96790, 3.16403, 3.37312,
3.59602, 3.83366, 4.08700, 4.35708, 4.64501, 4.95197, 5.27921, 5.62808, 6.00000}

In[299]:= **eqs29 = Table**[**N**[**oct**^(**n**/**29**), **6**], {**n**, **0**, **29**}]

Out[299]:= {1.00000, 1.06373, 1.13153, 1.20364, 1.28036, 1.36196, 1.44876, 1.54110, 1.63932, 1.74379,
1.85493, 1.97315, 2.09891, 2.23268, 2.37498, 2.52634, 2.68735, 2.85863, 3.04082, 3.23462,
3.44077, 3.66007, 3.89333, 4.14147, 4.40542, 4.68619, 4.98486, 5.30256, 5.64051, 6.00000}

In[300]:= eqs30 = Table[N[oct^(n/30)], 6], {n, 0, 30}]

Out[300]:= {1.00000, 1.06154, 1.12688, 1.19623, 1.26985, 1.34801, 1.43097,
1.51904, 1.61253, 1.71177, 1.81712, 1.92896, 2.04767, 2.17370, 2.30748,
2.44949, 2.60024, 2.76028, 2.93016, 3.11049, 3.30193, 3.50514, 3.72087,
3.94987, 4.19296, 4.45102, 4.72496, 5.01575, 5.32445, 5.65214, 6.00000}

In[301]:= eqs31 = Table[N[oct^(n/31)], 6], {n, 0, 31}]

Out[301]:= {1.00000, 1.05950, 1.12254, 1.18934, 1.26010, 1.33508, 1.41452, 1.49869,
1.58786, 1.68234, 1.78245, 1.88851, 2.00087, 2.11993, 2.24607, 2.37971,
2.52131, 2.67133, 2.83028, 2.99869, 3.17712, 3.36616, 3.56645, 3.77866,
4.00350, 4.24171, 4.49410, 4.76151, 5.04483, 5.34500, 5.66304, 6.00000}

In[302]:= eqs32 = Table[N[oct^(n/32)], 6], {n, 0, 32}]

Out[302]:= {1.00000, 1.05759, 1.11850, 1.18291, 1.25103, 1.32308, 1.39928, 1.47986,
1.56508, 1.65522, 1.75054, 1.85135, 1.95797, 2.07073, 2.18999, 2.31611,
2.44949, 2.59056, 2.73974, 2.89753, 3.06439, 3.24087, 3.42751, 3.62490, 3.83366,
4.05444, 4.28793, 4.53487, 4.79604, 5.07224, 5.36435, 5.67328, 6.00000}

In[303]:= eqs33 = Table[N[oct^(n/33)], 6], {n, 0, 33}]

Out[303]:= {1.00000, 1.05580, 1.11471, 1.17690, 1.24257, 1.31190, 1.38510, 1.46239,
1.54398, 1.63013, 1.72109, 1.81712, 1.91851, 2.02556, 2.13858, 2.25790, 2.38389,
2.51690, 2.65733, 2.80560, 2.96215, 3.12743, 3.30193, 3.48616, 3.68068, 3.88605,
4.10288, 4.33181, 4.57351, 4.82870, 5.09812, 5.38258, 5.68291, 6.00000}

In[304]:= eqs34 = Table[N[oct^(n/34)], 6], {n, 0, 34}]

Out[304]:= {1.00000, 1.05411, 1.11115, 1.17128, 1.23466, 1.30147, 1.37189, 1.44613,
1.52438, 1.60687, 1.69382, 1.78548, 1.88210, 1.98394, 2.09129, 2.20446, 2.32375,
2.44949, 2.58204, 2.72176, 2.86904, 3.02429, 3.18794, 3.36044, 3.54228, 3.73396,
3.93602, 4.14900, 4.37351, 4.61017, 4.85964, 5.12260, 5.39980, 5.69199, 6.00000}

In[305]:= eqs35 = Table[N[oct^(n/35)], 6], {n, 0, 35}]

Out[305]:= {1.00000, 1.05253, 1.10781, 1.16600, 1.22725, 1.29171, 1.35956, 1.43097, 1.50613,
1.58524, 1.66851, 1.75615, 1.84839, 1.94548, 2.04767, 2.15523, 2.26843, 2.38759,
2.51300, 2.64500, 2.78393, 2.93016, 3.08407, 3.24606, 3.41656, 3.59602, 3.78491,
3.98371, 4.19296, 4.41320, 4.64501, 4.88900, 5.14580, 5.41608, 5.70057, 6.00000}

In[306]:= eqs36 = Table[N[oct^(n/36)], 6], {n, 0, 36}]

Out[306]:= {1.00000, 1.05103, 1.10467, 1.16104, 1.22028, 1.28256, 1.34801, 1.41680, 1.48910, 1.56508,
1.64495, 1.72889, 1.81712, 1.90985, 2.00731, 2.10974, 2.21740, 2.33056, 2.44949,
2.57449, 2.70587, 2.84395, 2.98908, 3.14161, 3.30193, 3.47043, 3.64752, 3.83366,
4.02929, 4.23491, 4.45102, 4.67816, 4.91688, 5.16780, 5.43151, 5.70868, 6.00000}

In[307]:= eqs37 = Table[N[oct^(n/37), 6], {n, 0, 37}]

Out[307]= {1.00000, 1.04962, 1.10170, 1.15636, 1.21374, 1.27396, 1.33717, 1.40352, 1.47316, 1.54625,
1.62297, 1.70350, 1.78802, 1.87674, 1.96986, 2.06760, 2.17019, 2.27787, 2.39089, 2.50952,
2.63404, 2.76473, 2.90191, 3.04590, 3.19703, 3.35566, 3.52216, 3.69692, 3.88035,
4.07289, 4.27497, 4.48709, 4.70973, 4.94341, 5.18869, 5.44614, 5.71637, 6.00000}

In[308]:= eqs38 = Table[N[oct^(n/38), 6], {n, 0, 38}]

Out[308]= {1.00000, 1.04828, 1.09889, 1.15195, 1.20757, 1.26587, 1.32698, 1.39105, 1.45821, 1.52862,
1.60242, 1.67979, 1.76089, 1.84591, 1.93503, 2.02845, 2.12639, 2.22905, 2.33667, 2.44949,
2.56775, 2.69173, 2.82169, 2.95792, 3.10073, 3.25044, 3.40737, 3.57188, 3.74433, 3.92511,
4.11462, 4.31328, 4.52153, 4.73983, 4.96868, 5.20857, 5.46004, 5.72366, 6.00000}

In[309]:= eqs39 = Table[N[oct^(n/39), 6], {n, 0, 39}]

Out[309]= {1.00000, 1.04701, 1.09624, 1.14778, 1.20174, 1.25824, 1.31739, 1.37933, 1.44418, 1.51208,
1.58316, 1.65760, 1.73553, 1.81712, 1.90255, 1.99200, 2.08565, 2.18371, 2.28637, 2.39386,
2.50641, 2.62425, 2.74762, 2.87680, 3.01205, 3.15366, 3.30193, 3.45716, 3.61970, 3.78988,
3.96806, 4.15461, 4.34994, 4.55445, 4.76857, 4.99276, 5.22749, 5.47326, 5.73058, 6.00000}

In[310]:= eqs40 = Table[N[oct^(n/40), 6], {n, 0, 40}]

Out[310]= {1.00000, 1.04581, 1.09372, 1.14383, 1.19623, 1.25103, 1.30835, 1.36828,
1.43097, 1.49653, 1.56508, 1.63678, 1.71177, 1.79019, 1.87220, 1.95797,
2.04767, 2.14148, 2.23959, 2.34219, 2.44949, 2.56171, 2.67906, 2.80180,
2.93016, 3.06439, 3.20478, 3.35160, 3.50514, 3.66572, 3.83366, 4.00929, 4.19296,
4.38505, 4.58594, 4.79604, 5.01575, 5.24554, 5.48585, 5.73717, 6.00000}

In[311]:= eqs41 = Table[N[oct^(n/41), 6], {n, 0, 41}]

Out[311]= {1.00000, 1.04467, 1.09134, 1.14009, 1.19101, 1.24422, 1.29980, 1.35786,
1.41852, 1.48188, 1.54808, 1.61723, 1.68947, 1.76494, 1.84378, 1.92615,
2.01219, 2.10207, 2.19597, 2.29407, 2.39655, 2.50360, 2.61544, 2.73227, 2.85432,
2.98183, 3.11503, 3.25418, 3.39954, 3.55140, 3.71004, 3.87577, 4.04890, 4.22977,
4.41872, 4.61610, 4.82231, 5.03772, 5.26276, 5.49785, 5.74344, 6.00000}

In[312]:= eqs42 = Table[N[oct^(n/42), 6], {n, 0, 42}]

Out[312]= {1.00000, 1.04358, 1.08907, 1.13653, 1.18607, 1.23776, 1.29171, 1.34801,
1.40676, 1.46807, 1.53205, 1.59883, 1.66851, 1.74123, 1.81712, 1.89632, 1.97897,
2.06522, 2.15523, 2.24916, 2.34719, 2.44949, 2.55625, 2.66766, 2.78393, 2.90526,
3.03188, 3.16403, 3.30193, 3.44584, 3.59602, 3.75275, 3.91631, 4.08700, 4.26513,
4.45102, 4.64501, 4.84746, 5.05873, 5.27921, 5.50930, 5.74942, 6.00000}

In[313]:= eqs43 = Table[N[oct^(n/43), 6], {n, 0, 43}]

Out[313]= {1.00000, 1.04255, 1.08691, 1.13316, 1.18137, 1.23164, 1.28404, 1.33868,
1.39564, 1.45502, 1.51693, 1.58147, 1.64876, 1.71892, 1.79206, 1.86831, 1.94780,
2.03068, 2.11708, 2.20716, 2.30108, 2.39898, 2.50106, 2.60748, 2.71842, 2.83409,
2.95468, 3.08040, 3.21146, 3.34811, 3.49057, 3.63909, 3.79393, 3.95536, 4.12366,
4.29911, 4.48204, 4.67274, 4.87157, 5.07885, 5.29495, 5.52024, 5.75512, 6.00000}

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In[314]:= eqs44 = Table[N[oct^(n / 44), 6], {n, 0, 44}]
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Out[314]= {1.00000, 1.04156, 1.08485, 1.12994, 1.17690, 1.22582, 1.27677, 1.32983, 1.38510,  
1.44267, 1.50263, 1.56508, 1.63013, 1.69789, 1.76845, 1.84195, 1.91851, 1.99825,  
2.08130, 2.16780, 2.25790, 2.35175, 2.44949, 2.55130, 2.65733, 2.76778, 2.88281,  
3.00263, 3.12743, 3.25741, 3.39280, 3.53381, 3.68068, 3.83366, 3.99299, 4.15895,  
4.33181, 4.51185, 4.69937, 4.89469, 5.09812, 5.31001, 5.53071, 5.76058, 6.00000}
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