

Farey Sequence F_{19}

121 nodal positions along the double bass' D string for harmonics 1° through 19°
(stopping each node defines a 19-limit harmonic space)

Thomas Nicholson (2019)

sounding

[A = 0 cents] 1° 19° 18° 17° 16° 15° 14° 13° 12° 11° 10°

double bass (D string)

~ distance from nut on 3/4 size bass (string ca. 1050mm)

	-2	-8	-3								
	0mm	55mm	58mm	62mm	66mm	70mm	75mm	81mm	88mm	95mm	105mm

snd

12 19° 9° 17° 15° 7° 13° 19° 6° 17° 11°

db (II)

	-9										
	111mm	117mm	124mm	131mm	140mm	150mm	162mm	166mm	175mm	185mm	191mm

snd

23 13° 5° 19° 14° 9° 13° 17° 4° 19° 15° 11°

db (II)

		-16									
	197mm	210mm	221mm	225mm	233mm	242mm	247mm	263mm	276mm	280mm	286mm

snd

34 18° 7° 17° 10° 13° 16° 19° 3° 17° 14° 11°

db (II)

	292mm	300mm	309mm	315mm	323mm	328mm	332mm	350mm	371mm	375mm	382mm

snd

45 19° 8° 13° 18° 5° 17° 12° 19° 7° 16° 9°

db (II)

	387mm	394mm	404mm	408mm	420mm	432mm	438mm	442mm	450mm	459mm	467mm

56 11° 13° 15° 17° 19° 19° 17° 15° 13° 11°

snd

db (II)

+47 $\frac{11}{6}$ $\frac{13}{7}$ $\frac{15}{8}$ $\frac{17}{9}$ $\frac{19}{10}$ $\frac{2}{1}$ $\frac{19}{9}$ +3 $\frac{17}{8}$ +17 $\frac{15}{7}$ F+37 $\frac{13}{6}$ $\frac{11}{5}$

477mm -30 -14 -1 -2 -8 556mm 560mm 565mm 573mm

67 9° 16° 7° 19° 12° 17° 5° 18° 13° 8° 19°

snd

db (II)

+2 $\frac{9}{4}$ +29 $\frac{16}{7}$ $\frac{7}{3}$ $\frac{19}{8}$ +14 $\frac{12}{5}$ +34 $\frac{17}{7}$ $\frac{5}{2}$ +33 $\frac{18}{7}$ $\frac{13}{5}$ $\frac{8}{3}$ +27 $\frac{19}{7}$

583mm -35 -4 -16 -48 -4 642mm 646mm 656mm 663mm

78 11° 14° 17° 3° 19° 16° 13° 10° 17° 7° 18°

snd

db (II)

+49 $\frac{11}{4}$ $\frac{14}{5}$ +1 $\frac{17}{6}$ $\frac{3}{1}$ $\frac{19}{6}$ +12 $\frac{16}{5}$ Bb+39 $\frac{13}{4}$ $\frac{10}{3}$ +17 $\frac{17}{5}$ $\frac{7}{2}$ +16 $\frac{18}{5}$

668mm -19 -6 -18 -33 741mm 750mm 758mm

89 11° 15° 19° 4° 17° 13° 9° 14° 19° 5° 16°

snd

db (II)

+47 $\frac{11}{3}$ $\frac{15}{4}$ +9 $\frac{19}{5}$ $\frac{4}{1}$ +3 $\frac{17}{4}$ F+37 $\frac{13}{3}$ +2 $\frac{9}{2}$ $\frac{14}{3}$ $\frac{19}{4}$ $\frac{5}{1}$ $\frac{16}{3}$ *

746mm -14 -2 -35 -4 -16 -4 825mm 829mm 840mm 853mm

100 11° 17° 6° 19° 13° 7° 15° 8° 17° 9° 19°

snd

db (II)

+49 $\frac{11}{2}$ +1 $\frac{17}{3}$ $\frac{6}{1}$ $\frac{19}{3}$ Bb+39 $\frac{13}{2}$ $\frac{7}{1}$ $\frac{15}{2}$ $\frac{8}{1}$ +3 $\frac{17}{2}$ +2 $\frac{9}{1}$ $\frac{19}{2}$

859mm -6 -33 -14 -2 -4 919mm 926mm 933mm 939mm

111 10° 11° 12° 13° 14° 15° 16° 17° 18° 19° $\rightarrow \infty$

snd

db (II)

+49 $\frac{10}{1}$ $\frac{11}{1}$ $\frac{12}{1}$ Bb+39 $\frac{13}{1}$ $\frac{14}{1}$ $\frac{15}{1}$ $\frac{16}{1}$ +3 $\frac{17}{1}$ +2 $\frac{18}{1}$ $\frac{19}{1}$ $(\frac{1}{0})$

-16 945mm 955mm 963mm 969mm -33 -14 -2 -4 988mm 992mm 995mm 1050mm

* the fingerboard ends around here on most 3/4 double basses : the subsequent tones may only be played as harmonics, though they become progressively less playable as the available room for the bow shrinks.