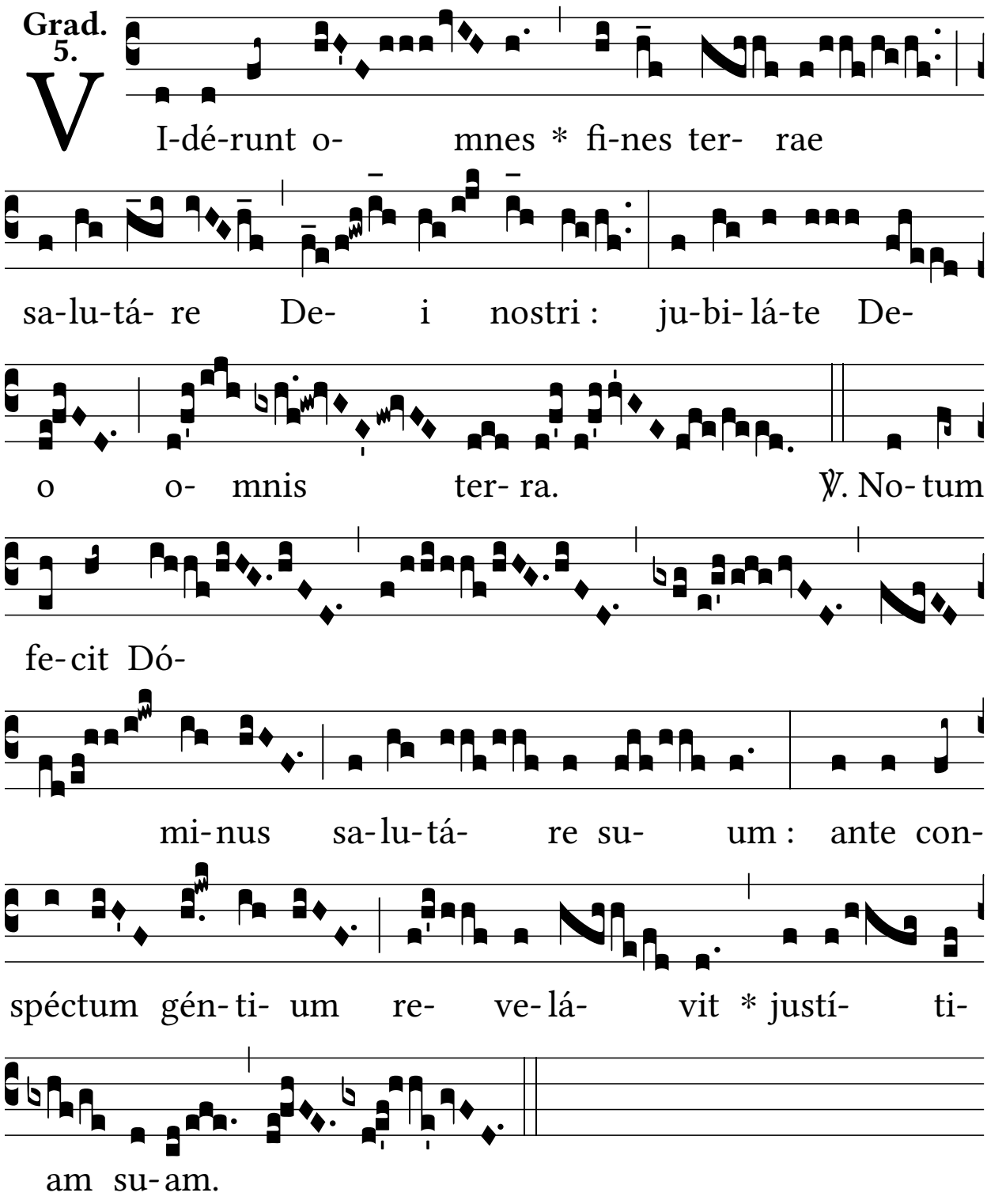
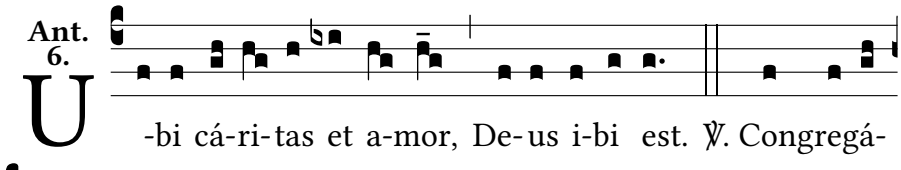
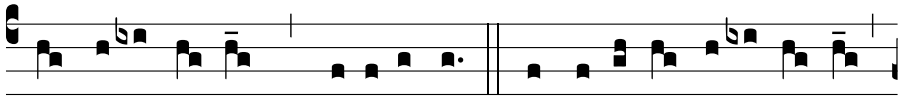

Grad.
5.
V
I-dé-runt o- mnes * fi-nes ter- rae
sa-lu-tá- re De- i nostri : ju-bi-lá-te De-
o o- mnis ter- ra. ℣. No- tum
fe-cit Dó-
mi-nus sa-lu-tá- re su- um : ante con-
spéctum gén-ti- um re- ve-lá- vit * justí- ti-
am su-am.

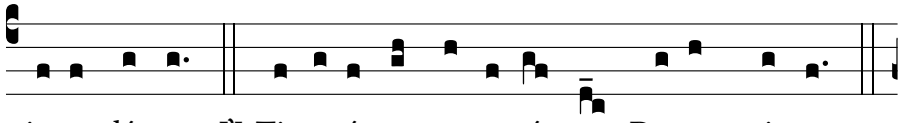
Ant. 6.



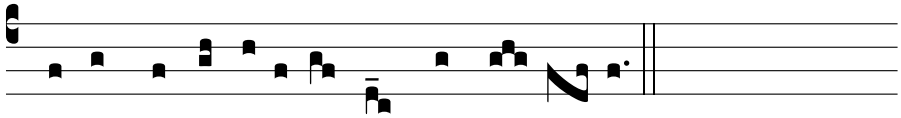
U -bi cá-ri-tas et a-mor, De-us i-bi est. ℣. Congregá-



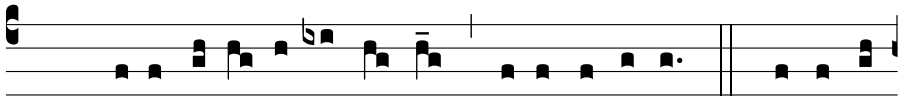
vit nos in u-num Christi amor. ℣. Exsultémus, et in i-pso



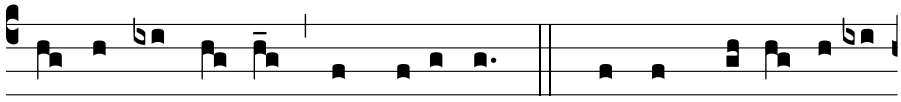
jucundémur. ℣. Time-ámus, et amé-mus De-um vi-vum.



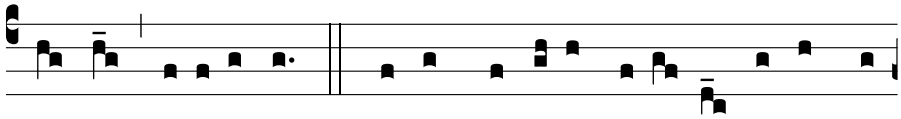
℣. Et ex corde di-li-gá-mus nos sin-cé- ro.



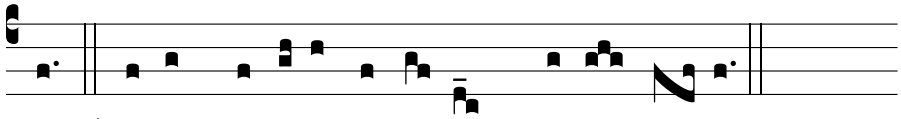
Ant. Ubi cá-ri-tas et a-mor, De-us i-bi est. ℣. Simul er-



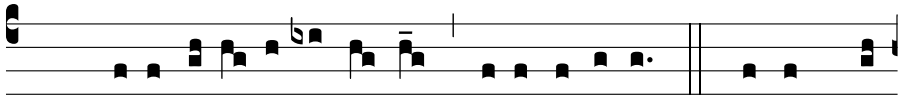
go cum in u-num congregámur : ℣. Ne nos mente di-vi-



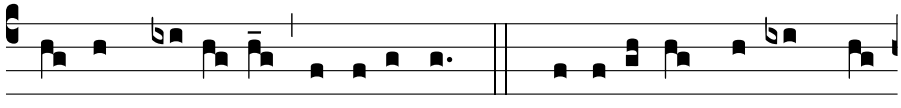
dá-mur, cave-ámus. ℣. Cessent júrgi-a ma-lígna, cessent li-



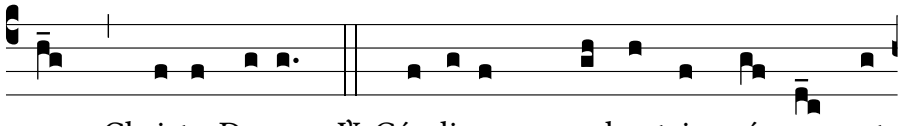
tes. ℣. Et in mé-di-o nostri sit Christus De- us.



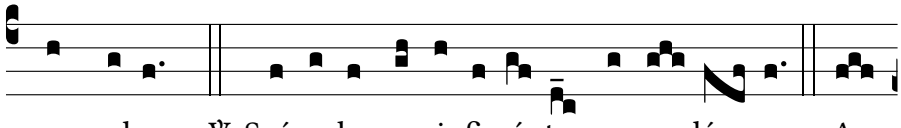
Ant. Ubi cá-ri-tas et a-mor, De-us i-bi est. ℣. Simul quo-



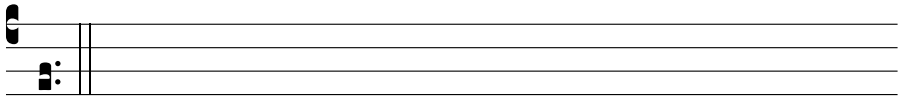
que cum be-á- tis vi-de-ámus. ℣. Glo-ri-ánter vul-tum tu-



um, Christe De-us : ℣. Gáudi-um, quod est imménsum, at-



que probum. ℣. Saécu-la per infi-ní-ta saecu- ló- rum. A-



men.

Euclid - Division of a Monochord

Preliminaries

1. If there should be rest and absence of motion, there would be silence. If there is silence and nothing moves, nothing would be heard. If, therefore, anything is to be heard, it is necessary that there first be pulsation and motion.

2. So, since all notes arise from some existing pulsation, and pulsation is impossible unless first arising from motion —and, of motions, there are the more frequent and the intermittent; and the more frequent make higher notes, the intermittent, lower notes—it is necessary that there be on the one hand higher notes since they are compounded of more frequent and abundant motions, and on the other hand lower notes, since they are compounded of intermittent and fewer motions.

3. So those higher than proper are loosened by subtracting motion and reach the proper point, and those lower are tightened by adding motion and reach the proper point.

4. Therefore, it is necessary to say that notes are compounded of parts, since by addition and subtraction they reach the proper point.

5. For as all things compounded from parts are ordered one to another in numerical proportion, so also is it necessary that notes be ordered to one another in numerical proportion.

6. For as with numbers there are some which are ordered in multiple ratios and others in superparticular and others in superpartient, so also is it necessary that notes be ordered one to another in such ratios.

7. Of these, the multiple and the superparticular are ordered one to another by one term: consonant. So we also recognize concerning notes that some are consonant and some are dissonant; and that consonant notes together make a single blend, and dissonant notes do not.

8. As this is the case, it is reasonable that two consonant notes, since they both are made into a single blend of sound, are—when ordered numerically one to another by one term—either multiple or superparticular.

***

Euclid - Division of a Monochord

Proposition 19

To mark the monochord according to the so-called immutable system.

Let there be the length of the monochord, which is also the length of the string, AB,

and let it be divided into four equal intervals by C, D, and E.

There will therefore be BA, which is the lowest note.

This AB is the sesquitertia (4:3) of CB, so CB will be consonant with AB a fourth higher.

AB is also the **proslambanomenos**.

Therefore CB will be the diatonic hypatōn (**lichanos hypatōn**).

Again, since AB is the double of BD, it will be consonant as an octave, and BD will be the **mesē**.

Again, since AB is the quadruple of EB, EB will be the **nētē hyperbolaiōn**.

I cut CB in two at F. And CB will be the duple of FB, so that CB is consonant as an octave with FB. So FB is the **paranētē diezeugmenōn** .

I take DG, the third part of DB. And DB will be the sesquialtera (3:2) of GB, so DB will be consonant with GB as a fifth. Therefore, GB will be the **nētē diezeugmenōn**.

I establish GH equal with GB, so HB will be consonant as an octave with GB, thus HB is the **hypatē mesōn**.

I take HK, the third part of HB. And HB will be the sesquialtera (3:2) of KB, so KB is the **paramesē**.

I take LK, equal with KB, and LB will be the low hypatē (**hypatē hypatōn**).

Therefore, every stationary note of the immutable system will be found in the monochord.

Proposition 20

It remains necessary to find the movable notes.

I cut EB in eight, and one equal part of these I establish EM, so MB becomes the sesquioctave (9:8) of EB.

Moreover, MB divides in eight, and one equal part of these I establish NM.

Therefore, by a tone, NB will be lower than BM, and MB than BE, so NB will be the trite hyperbolaion, and MB the diatonic hyperbolaiōn (**paranētē hyperbolaiōn**).

I take the third part of NB and establish NJ, so JB is the sesquitertia (4:3) of NB and is consonant as a fourth lower, and JB becomes the **tritē diezeugmenōn**.

Moreover, taking the half part of JB, I establish JO, so OB is consonant as a fifth with JB. Therefore, OB will be the **parhypatē mesōn**.

And equal to JO, I establish OP, so PB becomes the **parhypatē hypatōn**.

Now I take of BC a fourth part, CR, thus RB becomes the diatonic mesōn (**lichanos mesōn**).

[Therefore, the moveable notes will be found in the monochord.]