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Electric Duet

A review by Jon Voskuil

By Paul Lutus. From Insoft, 10175 Barbur Blvd., Suite 202B, Portland, OR 97219. Requires an Apple II with at least 32K RAM and DOS 3.3. Retail price: $29.95.

In the background as I write this I hear strains of Bach, Mozart, and Scott Joplin. Between each composition I hear the momentary whir of a disk drive. Glancing over at my monitor, I see highlighted the name of the piece being played inside a screen border wrapped around with the words "Apple II Electronic Jukebox."

It's really not very unusual to hear beeps, blasts, tones, and even tunes emanating from Apples. The Apple programs which appear in **SoftSide** often contain sound and musical enhancements, as do most commercially-available programs (especially of the arcade-game genre). Last November's issue was devoted almost exclusively to the use of music in microcomputers (and vice versa).

What IS quite unusual (unless you've invested in some additional hardware) is to hear two simultaneous voices coming from an Apple. A single musical voice is nice. It lets you play perfectly recognizable fanfares for winners and dirges for losers, and even do a respectable job accompanying flying bumblebees and other such classic solo creatures. But after awhile one really longs for some good ol' fashioned harmony. *Electric Duet* makes it happen — without any hardware additions at all.

Electric Duet is a two-voice music synthesizer/editor which is a well-conceived and neatly-done software package that goes a long way toward making it easy to create tunes in two-part harmony. Upon booting the disk, the initial temptation (to which you should definitely give in) is to enter the "jukebox" mode and listen to the 14 compositions already programmed and saved on the disk. You can settle for hearing these through your Apple's built-in speaker, or opt for much better sound by routing the program's output through your cassette cable and into an external amplifier and speaker. As you listen, you'll be able to hear several of the six different tonal qualities which can be programmed for each of the voices.

By the way, the word "voice" sometimes refers simply to one of the notes to be played, and sometimes refers to the particular sound quality of a played note (whether it sounds like an oboe, a violin, etc.). In the first sense, this is a two-voice music synthesizer, because you can play two different notes simultaneously, in harmony with one another. In the second sense, the program gives you a choice of six voices or sounds which can be assigned to either of the two notes being played.

After just listening for awhile, you'll probably get a yen to do something more creative. Switching over to the "piano" mode, you have the chance to play two-voice music in real time on the Apple keyboard. The screen display simulates a piano keyboard, showing you which keys to press to get the desired notes. The two upper rows of keys play one voice, the two lower rows the other voice. Definitely not a mode for virtuoso performances, this nevertheless allows you to play around with tunes and harmonies to see how they might sound in an actual composition.

Serious composing requires switching over to the music editor, which offers you two different modes of note entry. The first allows keypunched input of values for each note's duration and pitch, in a very natural format. For example, a half-note C in the third octave would be entered with the key sequence, "2,3C". Pressing ESC toggles to the other note to be entered, and then RETURN moves you to the next pair of notes. The notation for the previously entered pair of notes also remains on the input line; this allows you to change only the parts of the notation that need to be changed, without having to re-enter a duration or pitch which remains the same.

The second method of entering notes into the editor is to play them on the keyboard just as you do in the piano mode. Whatever "piano" key you press will play the note and cause the correct notation to be displayed on the input line; and pressing RETURN will enter that note and move on to the next one. You can set the duration of each note as you go, or (more easily) enter a series of notes and then go back to correct the durations. The documentation suggests playing notes in one voice for awhile, then going back to play notes in the accompanying voice for awhile. This procedure works quite nicely.

In addition to the ability to scroll backward and forward through a file of notes (listening to each one if you choose) to make changes in any given line, you can also easily delete or insert lines in any position. The procedure is to scroll to the desired line, "open" the file at that point with a couple of keystrokes, delete

or insert the line(s), and then close the file with a couple more keystrokes. In addition to adding forgotten notes, inserting voice changes at various places would be another common application for this ability. And, the same procedure allows you to insert into your file a series of notes previously saved onto disk — a natural for entering musical refrains and other repetitive material.

The editor also enables you to make limited or universal changes to the notes in your note file, using the "transpose" function. You can transpose the pitch of any group of notes, up or down, any chosen number of half-steps. You can do the same with their duration, shortening or lengthening them by any number of increments (e.g., from eighth to dotted eighth to quarter to dotted quarter...). Since this function acts on only one of the two voices at a time, you can independently manipulate the relative pitch of the two voices.

One of the best things about *Electric Duet* is that you can freely transplant the music you create with it into your own programs. (The publisher asks only that you include an acknowledgement of the *Electric Duet* program — a perfectly reasonable request.) The music files themselves are saved in binary form onto any 16-sector disk. The only other thing required is the Machine Language routine to play them, which can also be written from the *Electric Duet* program onto a normal disk. This routine can be adjusted to play music either through the Apple's speaker or through its cassette port, and can be located at any convenient place in memory (such as 300 hex). Once the player program and the music file(s) are on your disk, all you need to do is a couple of BLOADs, two POKEs, and a CALL, and your very own program is playing two-part harmony.

I find it pretty hard to fault *Electric Duet*. Its commands and procedures are logical and simple, easily learned but versatile enough to do the job. Prompt lines and menus combine to let you know what the computer is expecting as input, and errors are well trapped. Accidentally pressing RESET causes no problem; you're simply returned to the main menu with no damage to anything in memory. The documentation (a 17-page booklet plus a page of errata) is not dressed up in a fancy wrapper, but is clear and adequate. The single copy-protected disk supplied is double-sided, providing a backup of sorts if one side becomes defective. (I say "of sorts," because dogs, magnets, and other such perils seldom damage only one side of a disk.)

"One of the best things about Electric Duet is that you can freely transplant the music you create with it into your own programs."

The one thing I do find truly objectionable is that, once booted, there is no way to exit the program short of turning off the power switch. There ought to be a more graceful finale than that.

In spite of that one annoyance, I have no hesitation recommending *Electric Duet*. It's a good program at a reasonable price, and should be very useful — both in its own right as a creative program, and in providing good musical enhancements to other programs.

Electric Duet

By Paul Lutus

Now you can play two-part music on your Apple II without additional circuit cards. The Electric Duet plays two simultaneous notes through the Apple's built-in speaker or tape output.

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By Paul Lutus

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The Electric Duet is a high-quality music synthesizer for the Apple computer that can play two simultaneous notes without expensive add-on circuit boards. You can either play any of the music selections included on the Electric Duet disk, or create your own music with the versatile music editor. The Electric Duet has a five-octave range and a choice of four different instrument voices. The music can be played through either the built-in Apple speaker or an amplifier or stereo connected to the cassette tape output.

The ELECTRONIC JUKEBOX allows you to select and play any or all of the pieces saved on disk. You can build a music library on several disks, and play any piece from any of these disks from the Jukebox.

The PIANO lets you play the Electric Duet directly, using the Apple][keyboard as a piano keyboard.

The MUSIC EDITOR is where you create and save your own works. Notes can be entered either by name, or by using a "piano" mode and simply playing them into memory. You can have the editor play any or all of the notes in memory, or play each note as it is entered. The Transpose command allows you to transpose all or part of a song's pitch or duration. The finished song is then saved to disk, where it can be played using the Jukebox or edited further at any time.

Music created with the Electric Duet can be played from your own programs. This is done by saving the music file along with a special player module to your disk, which your program loads into memory, then calls.

The Electric Duet has features usually found only on expensive computer music packages costing hundreds of dollars. At $29.95, the Electric Duet is by far the best music value available today. See and hear the Electric Duet at your local Apple dealer.

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The Final Word in Graphics

by Paul Lutus

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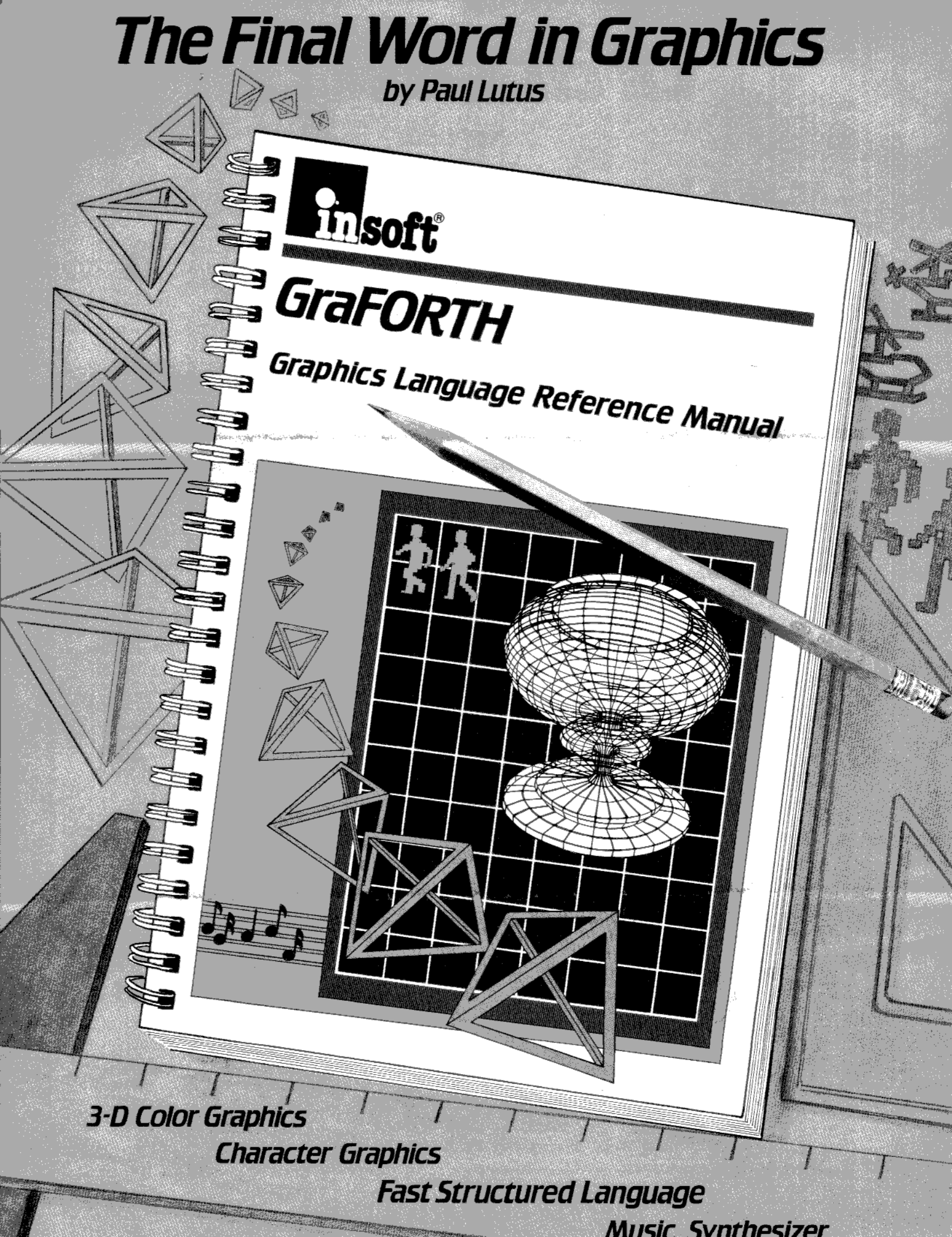
GraFORTH

Graphics Language Reference Manual



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by Paul Lutus

Make Your Graphics Come Alive!

GraFORTH combines sophisticated graphics features with a powerful programming language. Much more than a utility program, GraFORTH's superior graphics make it the ultimate language for entertainment and educational software creation. Included are plotting and line graphics, text display and character image graphics, and high speed 3-D graphics, all with a variety of colors and drawing options. GraFORTH can be used on a 48K Apple][system with DOS 3.3 and one disk drive. A 16K memory card is a useful option.

The Language:

GraFORTH is a graphics language similar in structure to FORTH, but entirely rewritten for ease of use and maximum speed. (Counting to 30,000 in GraFORTH takes less than three seconds!) Immediate commands and programs can be entered and run directly from the keyboard. GraFORTH includes a full set of arithmetic and string handling capabilities. Since standard DOS files are used, communication with other programs and languages is straightforward.

Plotting and Line Graphics:

The first level of graphics consists of plotting points, drawing lines, and filling areas in any of the Apple's high-resolution colors. Lines are drawn much faster than in Basic, and colored lines are never broken. Lines and areas can also be neatly erased from the screen without disturbing other images. Turtle-graphics are included to draw line shapes rapidly at any angle.

Text Display and Character Graphics:

GraFORTH displays both upper and lower case characters. You can use any of the five character sets provided, or create your own with the character editor. Character shapes may be combined to form a single multi-character image, then "block printed" at high speed anywhere on the Apple screen. Characters and character shapes can be drawn in color up to 8 times their normal size.

Three-Dimensional Graphics:

GraFORTH can also draw three-dimensional color images at speeds that make animation possible! Up to sixteen 3-D objects can be manipulated simultaneously. Images can be rotated, scaled, translated, and positioned, with or without perspective. The supplied image editor allows you to create your own 3-D images. Colors may be specified as an image is created, or selected when the image is drawn.

Music:

GraFORTH includes a sophisticated software-based music synthesizer for adding music or sound effects to your programs. Music can be played in any one of several instrument voices.

The System:

Programs written in GraFORTH can be saved to disk as complete stand-alone systems that do not require any additional software to run. This makes GraFORTH the ideal language for developing games and other graphics software.

The Package:

GraFORTH is supplied on a diskette with a special version of DOS 3.3 that loads into a language card (if present), freeing up more memory for your programs. The disk includes many sample image files, utilities, and complete demonstration programs detailing the features of GraFORTH. Included with the disk is a 200-plus page tutorial explaining the ins and outs of GraFORTH. No previous programming experience is necessary to use GraFORTH. See your local Apple dealer for a demonstration today.

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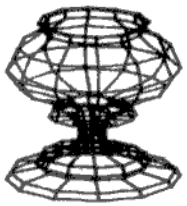
The Final Word in Graphics

GraFORTH][Demonstration



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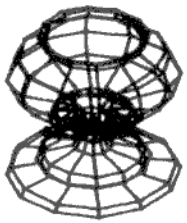

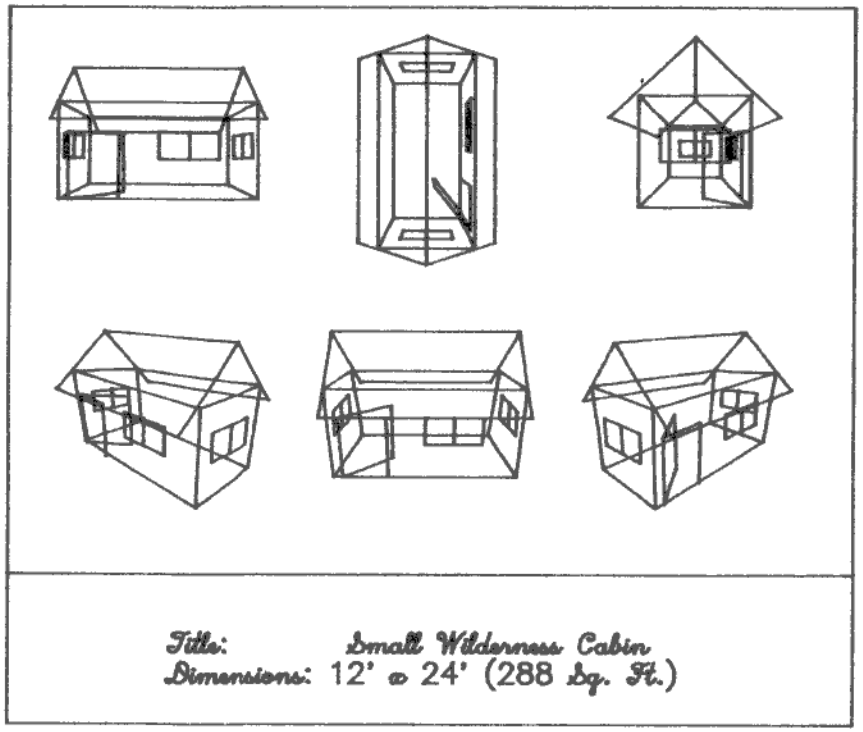

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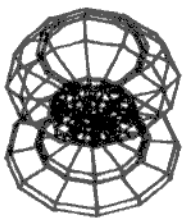

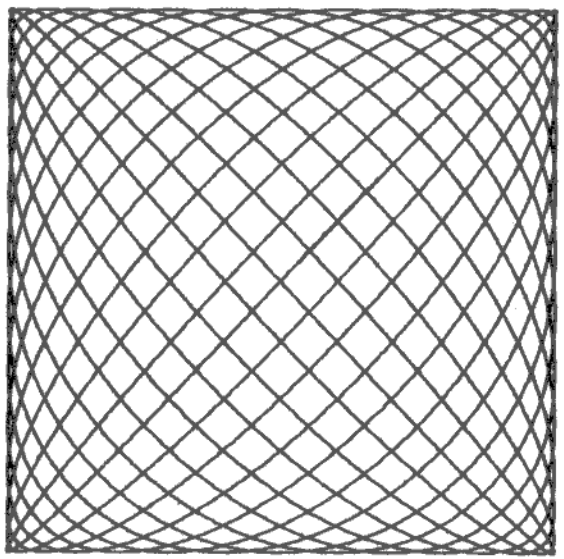

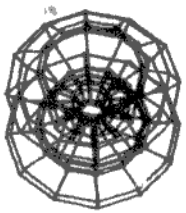

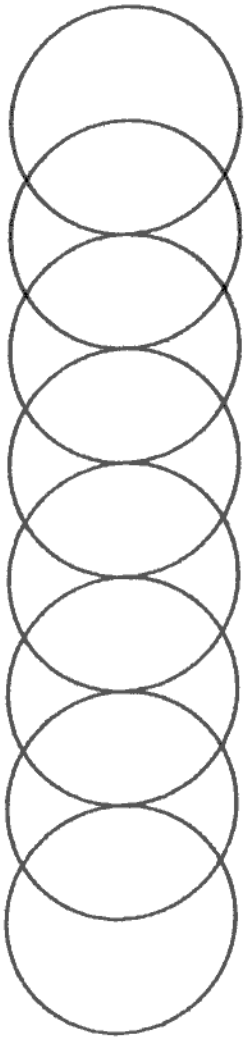

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