COREL CONCEPTS

Do the Math for Yourself

BASIC CALCULATIONS CAN MAKE IT POSSIBLE TO WORK MUCH MORE QUICKLY IN CORELDRAW

By Foster D. Coburn III

You might believe all the math you were forced to take in school was a complete waste of your time. Even in CorelDRAW, the ugliest math is done for you. But there are a large number of places you can use basic math to work faster. For those who really hate math, the computer still does the calculation for you!

THE PROPERTY BAR

The vast majority of math I use in CorelDRAW occurs within the Property Bar. **FIGURE 1** shows the Property Bar with a 2-in. square selected. At left are the x and y coordinates for the center of the object. That's the horizontal and vertical ruler position of the object. Then comes the height and width of the object, shown in inches on my display because that's the measurement system on my installation. The right-most values are the percentage of the height and width from the size that was originally drawn. In this case, I started with a 2-in.square so the 100% indicates I haven't changed the size yet.

Let's say you want the square to be centered a third of the way across the page and a third of the way from the bottom of the page. In this case, my page size is 8.5 in. wide by 11 in. tall. I can enter 8.5/3 in the top box and 11/3 in the bottom box, and CorelDRAW will do the math to put the center of the object at x 2.833 and y 3.667. You could have any size page and the basic formula is the same.

When the object is sized at 2 in. square, most of us can easily do the math off the top of our head to double the size. But often you'll have odd-sized objects, so follow my easy math example to give us the formula to increase the size of anything you wish.

Let's say we want our rectangle to be 1.5 times its current size. For either the height or width, put in 2*1.5 and press Enter. Voila, it is now 3 in. square! (You don't have to enter the change in both fields when the object is set to scale proportionally.) We could do the same thing by changing the percentage to 150%.

DIVIDING THE PIE

Now let's use a slightly more complex formula to build a pie chart. A pie chart needs data values that we wish to represent, ideally adding up to 100. I'll go with 8, 15, 19, 27, and 31. The process is the same, no matter the values.

I'll start by drawing a circle 6 in. in diameter. The size doesn't matter as long as it's a circle. On the Property Bar, click the pie wedge symbol and the circle will turn into a 270-degree wedge. **FIGURE 2** shows the "wedge" section of the Property Bar for the starting point of our exercise.

Just in case you've forgotten, there are 360 degrees in a circle. This is important, because it will be part of our formula. We know the starting value of the wedge for the first piece is zero. In the bottom value, we'll type .08*360 to represent 8% times 360 degrees. CorelDRAW does the math to come up with 28.8. Now make a copy of the wedge using the + key on the numeric keypad (or Ctrl+C and Ctrl+V). It would be a good idea to fill this new piece with a different color.

The top box will have the same value as the ending value on the previous wedge. In our example, that's 28.8. Now we need to add a 15% wedge. So the bottom box will have 28.8 + (360*.15). After pressing enter, the formula should change
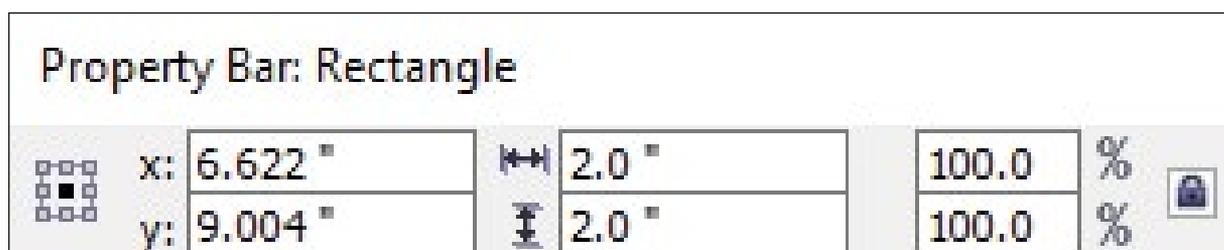
FIGURE 1: Left end of the Property Bar when a rectangle is selected

FIGURE 2: A 270-degree pie wedge represented on the Property Bar

to 82.8, which also will be the starting value (top box) for the next wedge.

Repeat the process for the next three wedges. Remember the top box always gets the same value as the bottom box from the previous wedge.

In the bottom box, type the following three formulas for the next three wedges: 82.8 + (360*.19), 151.2 + (360*.27), and 360. Why no formula on the last one? If the percentages add up to 100%, it should always end at 360. When done, you can select all wedges and rotate the pie chart if you feel it would look better with a different wedge on the bottom.

FIGURE 3 shows my finished pie chart, built with the values described above.

You can also use this to build bar charts. The exact method depends on the values involved so feel free to adjust the numbers I provide to fit the numbers in your chart. For our example, we're going to work with dollars and the top of the chart should be around $10,000.

So let's define the math to be .75 in. for every $1,000. If the value is $6,500, you'll move the decimal point for your math to be 6.5 and multiply that by .75 in. (6.5*.75) for the bar height. You'll predefine the width of the rectangle, which won't change.

I started by drawing a rectangle that is 1 in. tall by .25 in. wide. Again, the width only matters as long as the rectangle fits the defined area. Making it 1 in. tall works for math purposes for when we use multiplication to adjust the height. Select a rectangle and multiply the monetary value
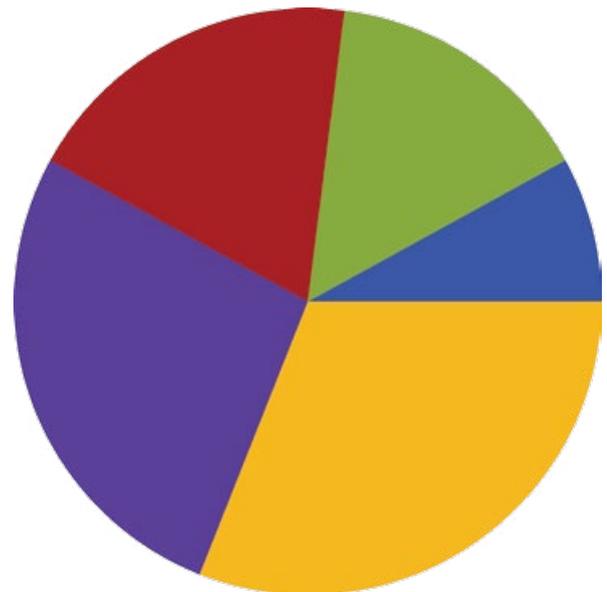
FIGURE 3: Pie chart built using CorelDRAW's math capabilities

(with decimal point moved) by the multiplier (.75 for each thousand).

FIGURE 4 shows a year's worth of data in bar chart form based on the formula defined above.

By using CorelDRAW to build the bar chart, I'm able to use all of the different fills available to dress up the chart. For Figure 4, I added a multistep fountain fill to the bars to give them a rounded look.

PUT MATH TO WORK

Now it is time to let your creativity run wild. You have the basics of how math in CorelDRAW works. Use mathematical symbols in any box that allows you to enter a value.
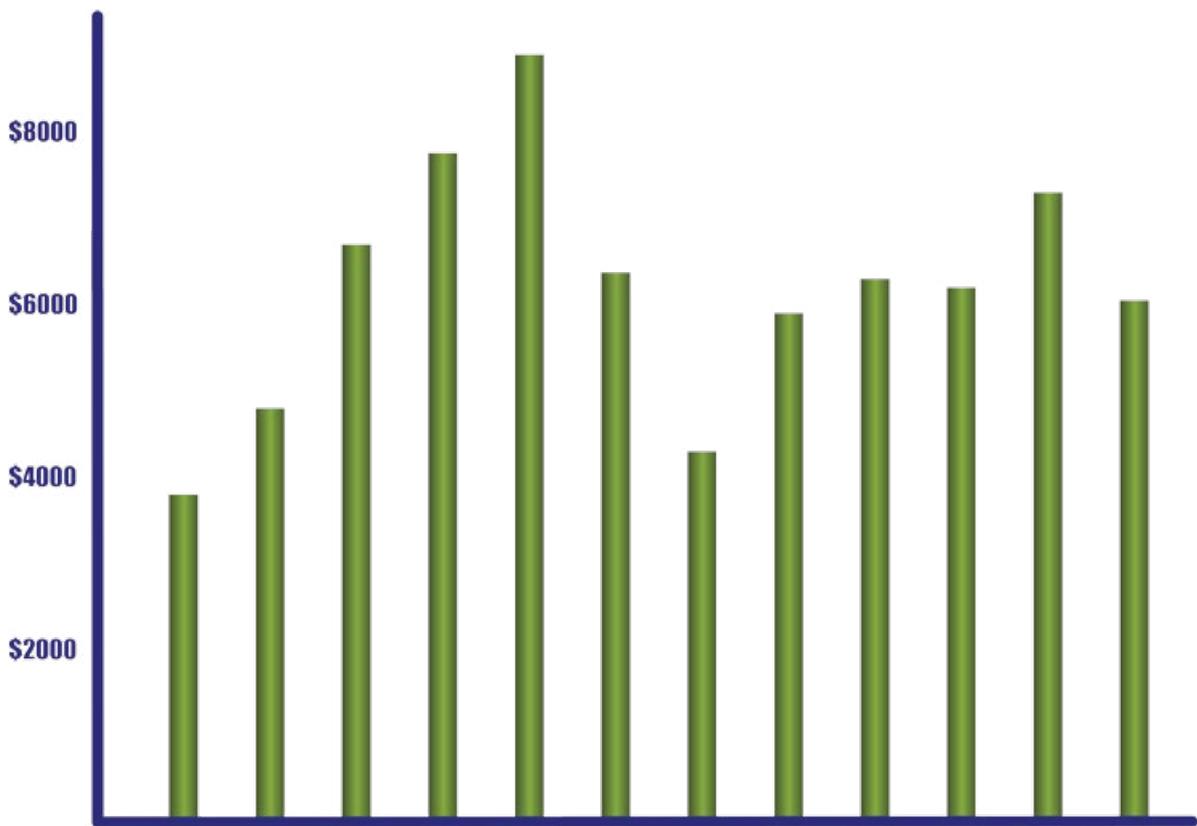
FIGURE 4: The height of the bars on this bar chart was set using math.

Keep in mind that you aren't limited to simple math; CorelDRAW can even do trigonometry. I know the boxes support something like sin(45) to represent the sine of 45 degrees, but I don't remember enough math to tell you why you would want to use it!

You can experiment with different types of formulas that may be useful to your workflow. There isn't a full definition of all the supported functions. Go ahead and test something; you may find it just might work!

You can move objects, size objects, rotate objects, and much more using various math formulas. It may seem a little crazy at first, but soon you'll find it is something you use quite often.

One of my favorite uses is to place guidelines in exact positions. The math functions make it easier to define spacing and columns on the page. Adding one every inch is

easy. But fractions of an inch get tougher. That's where the math comes into play.

Once you get the hang of what you can do with math in CorelDRAW's number boxes, you'll find ways to use it in every project. The examples I've shown are all very simple, and you will undoubtedly build more complex functions to accomplish perfect sizing, spacing, and more!

Foster D. Coburn III is the author of 13 books on CorelDRAW, the latest being *CorelDRAW X6 Unleashed*. He also writes the free Graphics Unleashed Blog (www.graphics-unleashed.com) and provides fonts, artwork, and add-ons of interest to CorelDRAW users through the CorelDRAW Unleashed website at https://coreldrawunleashed.com. Connect with Graphics Unleashed on Facebook at www.facebook.com/graphicsunleashed and follow Foster on Twitter @fostercoburn and Instagram @fostercoburn.

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