Large-Format Math

I was told that there would be no math, that's why I went to art school.

Sorry. There's math. Not a lot, but these basics will make your life much easier in the long run.

File Sizes

The largest artboard that Adobe Illustrator allows is 227" x 227", however when you export a PDF you will find that Adobe Acrobat is limited to only 200" x 200"! What happens when your finished print is larger than that? Simply create the art to scale. We recommend an easy to convert proportion like 1:4 or 1:12. The second option is particularly easy to calculate: for a 30' x 10' banner you would design it at 30" x 10". Remember to scale your bleeds: a 1" bleed at 1:12 scale is .083" (1 ÷ 12).

When scaling vector art and text it will enlarge perfectly when printing; however, when scaling pictures and raster images it is critical to properly calculate resolution as we discuss in the next section.

Resolution

First the units: Resolution is spoken of in terms of pixels, dpi, and ppi.

A pixel is not a unit of measurement, it merely represents the smallest unit of image data: a "picture element" or "pix-el". Depending on the number of pixels you pack into a given area, that determines your resolution. PPI (pixels per inch) are used for video and DPI (dots per inch) are used for printing.

To calculate print size, divide the image's pixel size by your target resolution. 100 dpi at print size is ideal – especially for projects like tradeshow graphics, but for large banners that are viewed from a distance we have seen resolutions down into the 30's suffice.

For example: your photograph 13 megapixels, or 4800 x 2700 ppi. At 100 dpi your print would be 48" x 27", at 72 dpi, 66.7" x 37.5", at 36 dpi 133.3" x 75" (pro tip – if taking custom photographs, record in RAW, not jpeg format for highest resolution. Also, never save to JPG – always as a TIF with no compression).

Continued

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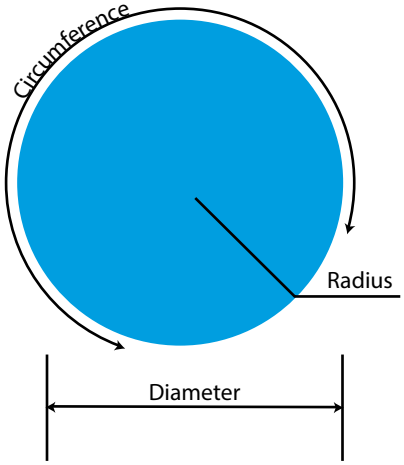
Pole Pocket Sizes

2πR is the formula for the circumference of a circle. If the pole you are using has a 2" diameter and 1" radius then 2" x 3.14 x 1" = 6.28". Since a pole pocket is folded over, you already have ½ the material you need, so no need to multiply x 2. You don't want it to be the exact size or it would be too difficult to insert, so we recommend:

3.25 x radius and round up to the nearest inch.

Pole Diameter	Pocket Spec
½"	1"
1"	2"
1 ½"	3"
2"	4"



Too Many Units!

Large format media thickness is defined in several measures that can get confusing. Common units are fractional and decimal inches, millimeters and mils. Keep in mind that "mils" are thousandths of an inch. A "millimeter" is 39 "mils" thick. Here are some common thicknesses and the conversion between the units.

½" = .5" = 12.7mm = 500mil

¼" = .250" = 6.35mm = 250mil

1/8" = .125" = 3.175mm = 125mil

1/16" = .0626" = 1.6mm = 62.6mil

For other sizes, please refer to our handy Media Thickness Chart found here.

Please call with ANY questions, and thank you for your business!