COMPLEX REPEATING PATTERNS PART I

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Though there are multiple ways to get to the same result, for me the following method is the most accurate, detailed and versatile, and unlike other methods it allows unlimited future reworking of the pattern if needed… it's also requires the most work, so be prepared.

(*note: This tutorial assumes you know how to use the pen tool with a degree of proficiency.)

STEP 1

There are a myriad of excellent resources and inspiration for repeating patterns online and anytime I'm creating something this complex I like to at least have a piece of reference material to get me started. In this case I'm going to go wallpaper shopping… yes, actual wallpaper. I paid a visited to the **Wallpaper Direct** website and did a search for "damask" patterns. Once I found a pattern I thought would make a good starting point I copied the image and pasted it into a new Photoshop document.

To get this swatch for yourself if you're following along at home follow **this link** to reach the search page where I found my pattern. Click on the DE067 / Ashdown swatch which will open the popup window showing the pattern repeating in the background (although not exactly perfectly). Command-Click (PC: Right-Click) on the background pattern in the upper left corner of the window and choose "View Background Image", this will show just the .jpg file the page is using as it's repeating background. Command-Click (PC: Ctrl-Click) on the image and choose "Copy Image" then switch back to Photoshop and press Command-V (PC: Ctrl-V) to paste the pattern onto the stage of a new document.

(*note: I'm using a 1000×1000 pixel document so that I can have plenty of room to work.)
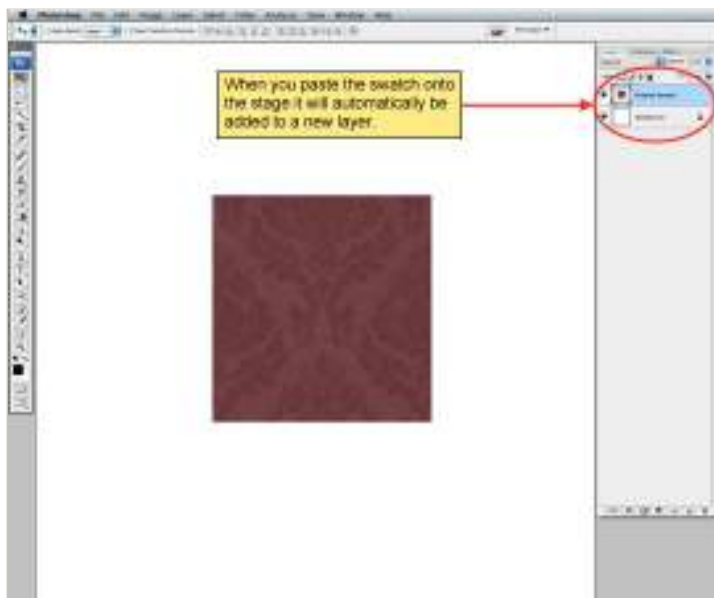
STEP 2

Next lets press Command-J (PC: Ctrl-J) to duplicate the new layer and move the copy to where the next tile in this repeating pattern should go. Repeat this another two times until you've created a space where you can see how the pattern is supposed to look on all sides. I'm going to place a copy above, below and off to the right of my initial swatch. If you're using the same swatch as me, you'll notice that the edges don't meet up exactly right (like there are a few edge pixels missing), to compensate for this I'm going to leave a little gap between those spaces so when I trace the pattern everything will actually be in the right place.

To keep things clean select all 4 pattern layers in the layers palette and press Command-E (PC: Ctrl-E) to merge the selected layers into a single layer.
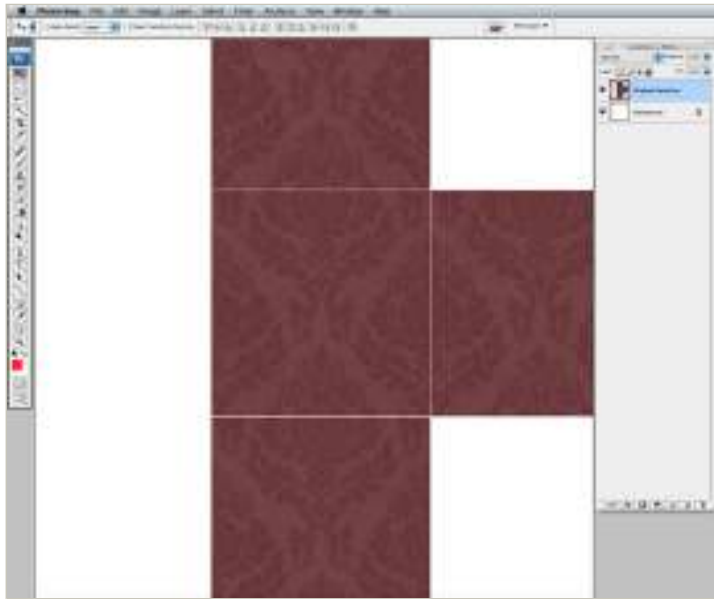
STEP 3

Now that I've got a good idea of the flow of the pattern we've got one last step in the setup process before we get into creating the new pattern. We'll be tracing the edges of our source pattern with the pen tool in a minute and since we obviously want our pattern to be perfectly symmetrical lets add a simple vertical guide. If your rulers aren't visible press Command-R (PC: Ctrl-R) to bring them up and drag a guide onto the stage by clicking on the ruler on the left side of the stage and dragging the guide out to the stage. The guide needs to cut the pattern in half perfectly.

STEP 4

This is where the real work begins. Grab the Pen tool by pressing the P key. Beginning at the top of the pattern place an anchor point on the guide line and begin tracing the right (or left) side of the pattern. I find that zooming in on the area I'm working on makes this easier. Keep in mind that you're creating a new pattern here and you can take as much liberty or add/subtract as much detail as you see fit. The swatch we're working on is just a guide and you can deviate as much as you like.

Using the Pen tool begin tracing the right (or left) side of the pattern using the guide as the centerpoint.
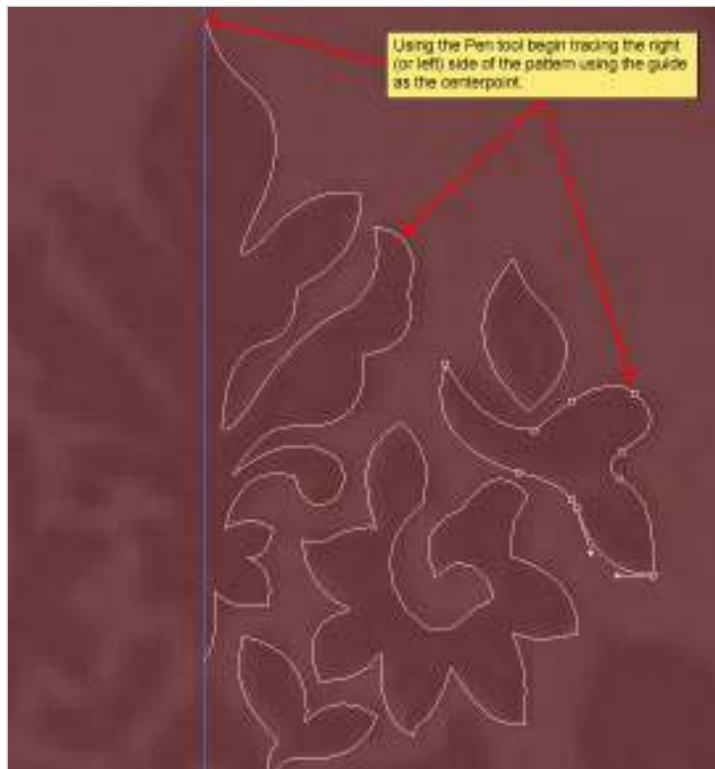
STEP 5

Work until you've got one side of the pattern completely traced out.

STEP 6

Before we go any further lets click over to the Paths tab in the Layers palette and give our work path a name (if it isn't visible choose Window>Paths from the main menu). If we were to deselect our path and start a new work path at this point we would loose all that hard work which (speaking from experience) totally sucks. By giving the path a new name we commit it as part of our working document.

Press the A key to switch to the Path Selection tool and drag a selection around the whole path to select the entire thing. You'll know it's all selected because every point on the entire path will be selected.
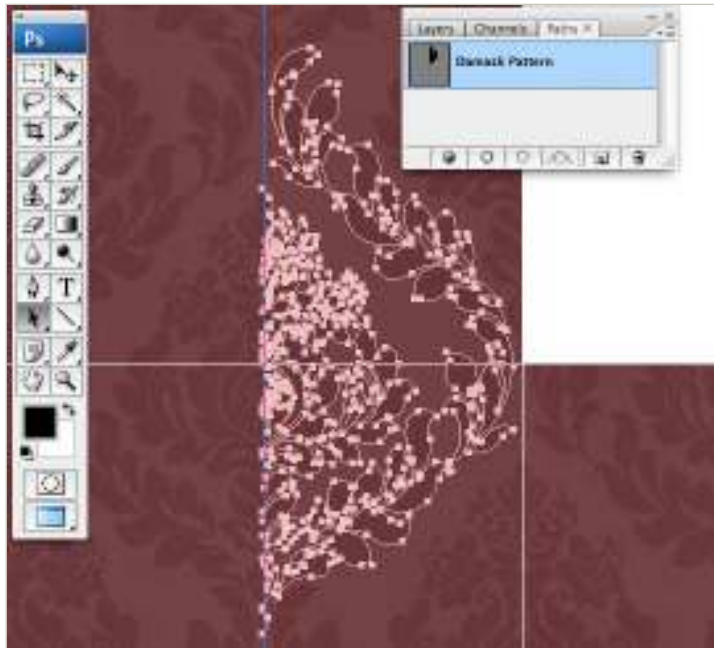
STEP 7

With the whole path selected and the Path Selection tool still active hold down the Option (PC: Alt) key and click and drag the path to duplicate it. This will effectively duplicate our entire path inside the existing path layer. Be sure to drag the copy far enough away from the original that the two are not touching.

(*note: If you press and hold the shift key once you begin to drag/copy the path you can constrain your the line of your drag so it is exactly straight across from the original.)
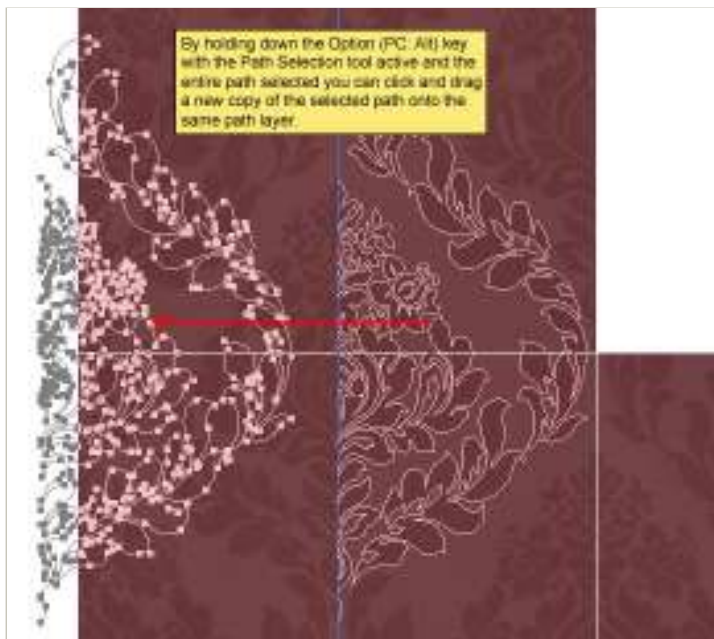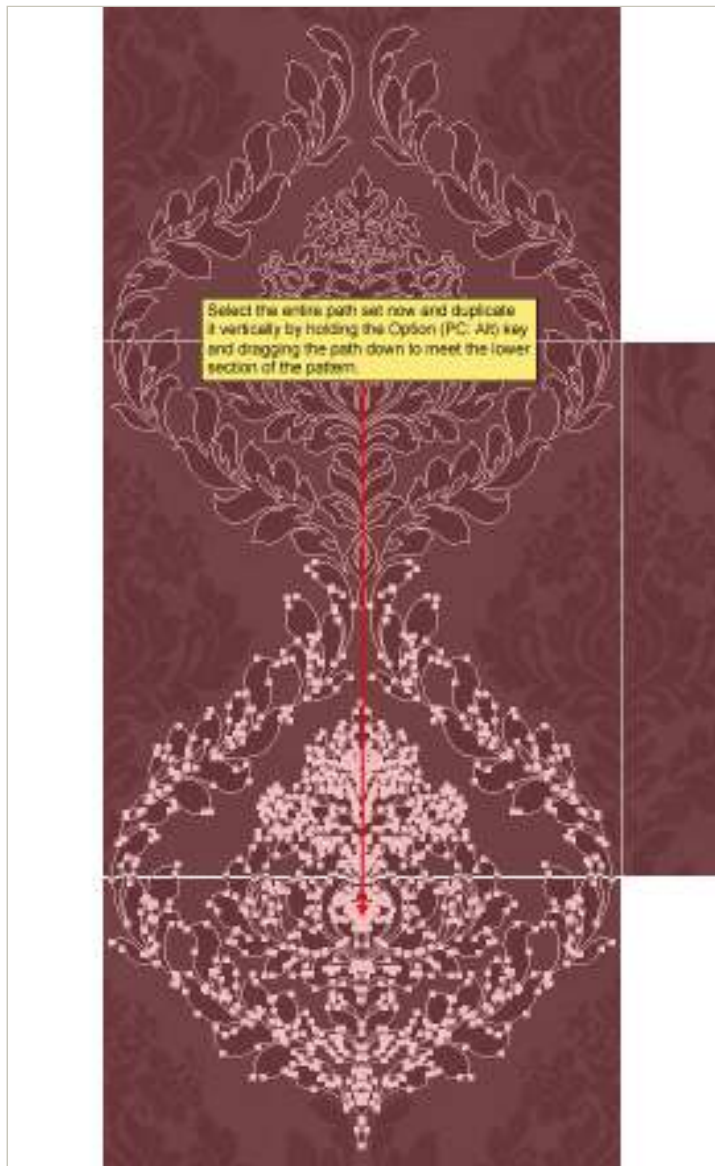

STEP 8

Obviously we need to make this copy of our path face the opposite direction so lets choose Edit>Transform Path>Flip Horizontal from the main menu. Then with the arrow keys move this copied path to meet the other side. You will want to zoom in on one of the junction points as close as possible to make sure that the two paths meet perfectly at the center. I found that hiding the guide made it easier as well.

The completed path with the background layers hidden.
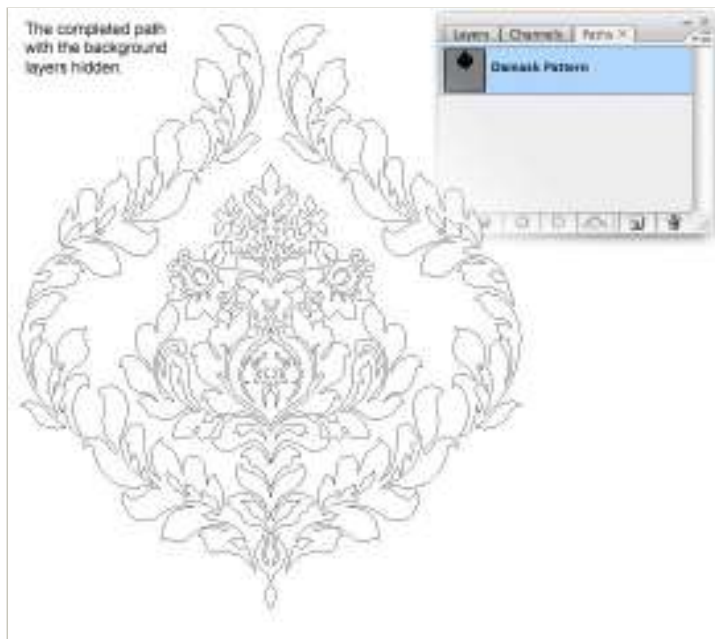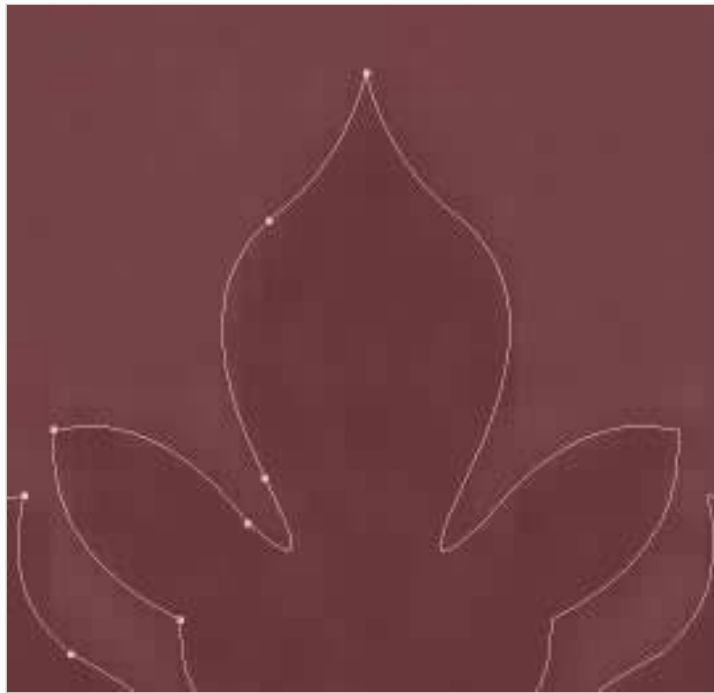
STEP 9

Because this core pattern repeats vertically with a slight overlap, I'm going to now select the entire complete path and duplicate it again (just like before), this time dragging it vertically down until it sits over the source pattern below, slightly overlapping the upper path.

Select the entire path set now and duplicate it vertically by holding the Option (PC: Alt) key and dragging the path down to meet the lower section of the pattern.

STEP 10

Notice that to the right and left of the main pattern that the center portion of that pattern is repeated on each side. To create these we'll simply duplicate the path again, remove the leafy outer border and place what's left to the right and then the left of the main pattern.

(*note: I'd hope you know better than to get this far into a complex project without saving your document, but if not, you ought to do it now!)
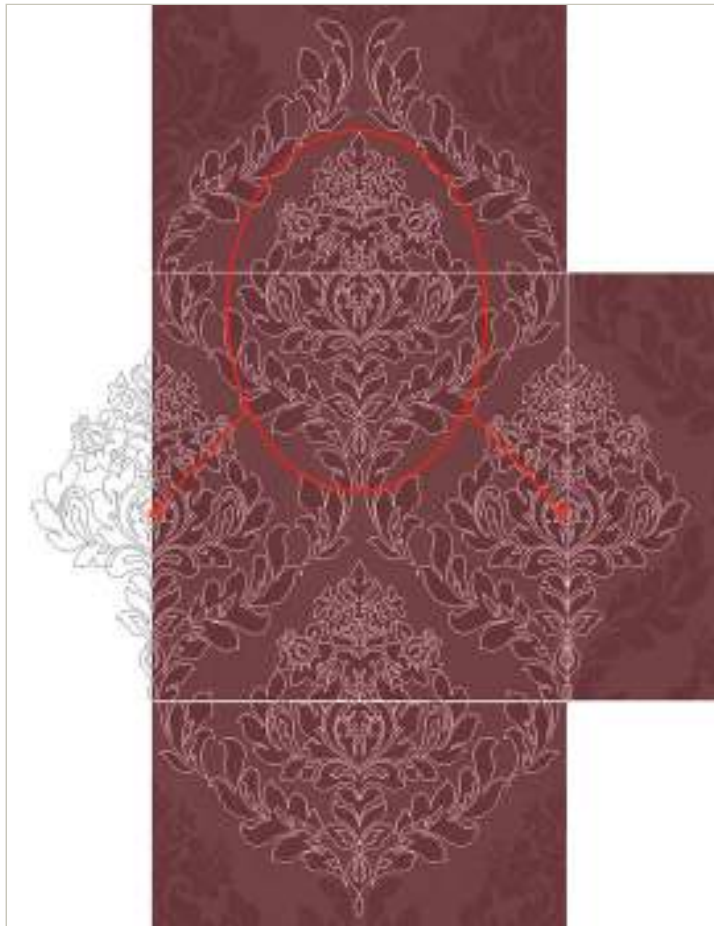
STEP 11

The path layout is now complete so lets switch back to the Layers palette and create a new layer by clicking the Create New Layer icon at the bottom of the Layers palette or by using the keyboard shortcut Command-Shift-N (PC: Ctrl-Shift-N) and call the layer Pattern.

Press the D key to reset the foreground color to black and then fill the layer with black by pressing Option-Delete (PC: Alt-Backspace). Now lets add a Vector Mask to this layer using our path. Press the P key to switch to the Pen tool, Control-Click (PC: Right-Click) on the path and choose Create Vector Mask.

You can now hide or delete the original pattern reference layer because we don't need it anymore.

STEP 12

Now that we've got the pattern laid out with all it's parts it's time to define the center of the pattern that will be our repeating section. We'll begin by placing a guide at a top point of the pattern. It's important to choose a spot at the top that's easy to find and contains all the repeating information. I chose the top of this point to make it easy to find the correlating point in the lower area. It helps a lot placing these guides to zoom in until you can see each pixel.

(*note: Before placing these new guides I chose View>Clear Guides from the main menu to remove the center guide we placed on the stage earlier.)
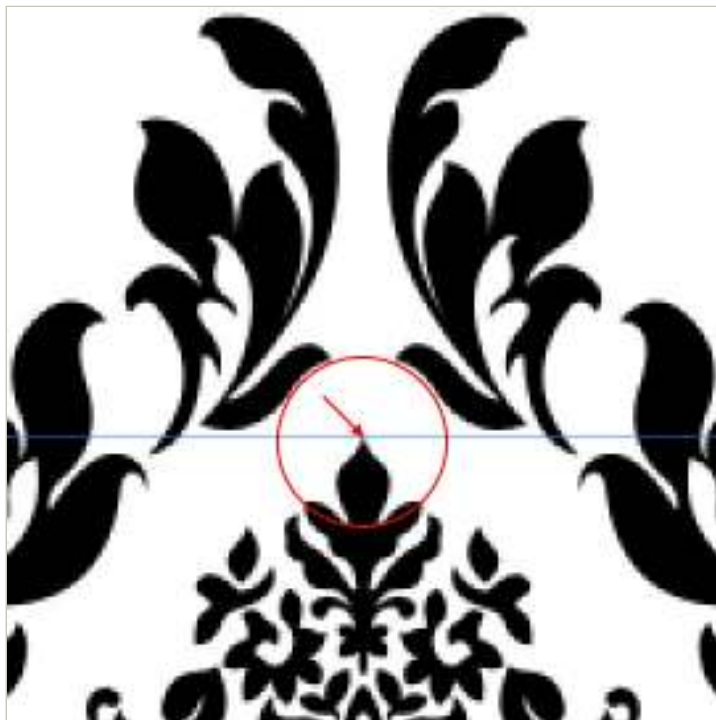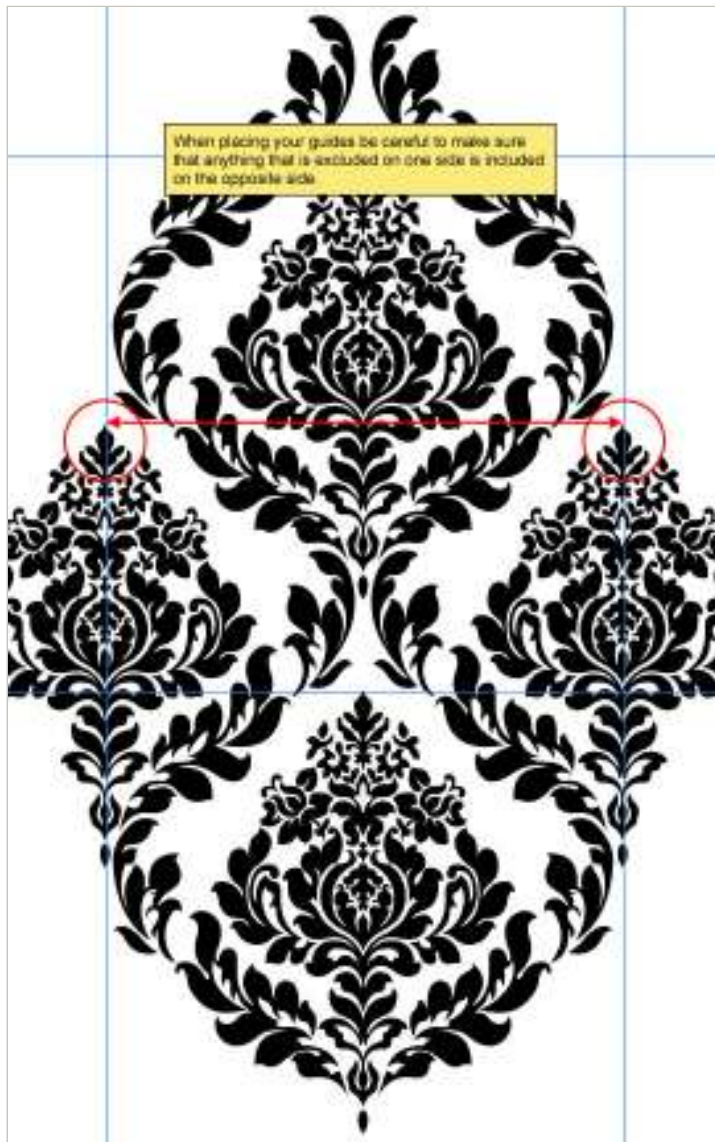
STEP 13

Now scroll down and find that EXACT same point in the lower half of the pattern and place another guide there. Every pixel counts so make sure your guide is placed perfectly.

STEP 14

Repeat this process adding guides to the left and right sides of the pattern. Make sure that any parts of the pattern that are outside the guide on the left are inside the guide on the right.

When placing your guides be careful to make sure that anything that is excluded on one side is included on the opposite side.
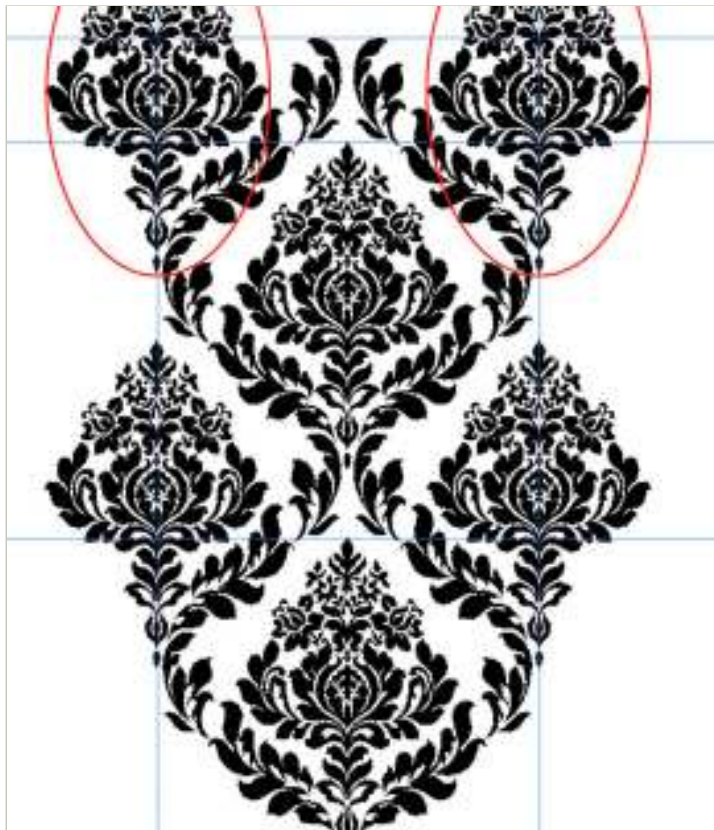
STEP 15

With all my guides placed for the pattern I'll often create a selection inside my guides of the pattern area, copy the selection and paste it into a large new document where I can duplicate the pasted tile and layout the repeating tiles to make sure everything lines up perfectly. In this case I discovered that a small area at the top corners of my pattern were missing. I show you this oversight to demonstrate how important it is to make this test file before going any further and how easy it is to miss small details in a complex pattern.

Testing your pattern at this stage will save you hours of trouble later.

Making a test file and manually tiling the pattern will help you know if you've done everything right. In this case I've neglected to duplicate the smaller pattern piece into the upper corners of my pattern space.

The nice thing about using this test file is that we can discover and easily fix the error before we go any further.

STEP 16

By simply deleting the Vector Mask from my layer and adding copies of the smaller side elements to the top of the design back in my **Paths** layer in the Paths palette, and adding a new Vector Mask including the modified paths I easily remedied the problem.
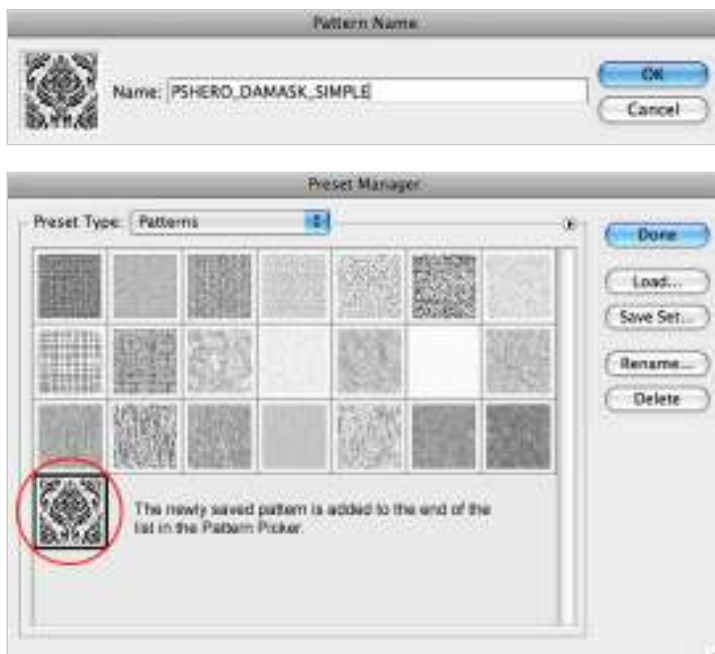

STEP 17

Now that we've fixed and tested the pattern to insure that it tiles perfectly it's time to turn this baby into a Photoshop pattern.

We only want the black areas to be visible on in the pattern so hide the **Background** layer by clicking the eye icon next to it in the Layers palette and make sure the **Pattern** layer is selected as the active layer. Press the M key to invoke the Rectangular Marquee tool and drag a selection inside our guided area.

STEP 18

Choose Edit>Define Pattern from the main menu, give your pattern a name and click OK. The pattern has been saved and is now available in the Pattern Picker. If you choose Edit>Preset Manager and choose Patterns from the menu you will find your new pattern at the end of the list.

STEP 19

You've now completed Part I of the tutorial. You can now continue to **Complex Repeating Patterns Part II** where we'll add color and texture to create a stunning and versatile repeating pattern.