THROUGH LAYERS AND DIMENSIONS pdf

1: Core - Keras Documentation

The book Through Layers and Dimensions: A Journey in Eternity presents a unique, fascinating explanation of how people come by birth to this planet, which layers they can possibly go through, and what alternative places they may go after they die.

Water flows from the overhead tank consists of three tubes: The measurement of Q is done after reaching the steady state. The test is repeated two or three times and the average value of Q is taken for the calculation of K. This test is suitable for coarse grained soil where a reasonable discharge can be collected in a given time. Falling Head Permeability Test: Falling head test is suitable for less permeable soils. The water level in the stand pipe constantly falls as water flows. Observations are started after steady state of flow has reached. The averages of time intervals are taken for calculations. Observation sheet for falling head permeability test: Permeability of Stratified Soils: Where a soil profile consists of a number of strata having different permeability, the equivalent or average permeability of the soil is different in direction parallel to and normal to, the strata. For flow parallel to layers the hydraulic gradient in each layer is the same and the total flow rate is the sum of flow rates in all the three layers. So the equivalent permeability for flow parallel to the strata is always greater than that for flow normal to the strata i. In a falling head permeability test on a specimen 6 cm high and 50 cm2 in cross-sectional area, the water level in the stand pipe, 0. The specimen is 6 cm long and has a sectional area of 50 cm2. Determine the permeability, the flow velocity V and seepage velocity Vs. A sand deposit is made up of three horizontal layers of equal thickness. Find the equivalent permeability in the horizontal and vertical direction and their ratio. Calculate the value of coefficient of permeability of soil with their effective dia 0.

THROUGH LAYERS AND DIMENSIONS pdf

2: Photoshop image size and resolution

Mitchell, Sounds like a template issue. Set up in your template the layer ytou want for the dimensions. and every drawing created forward will be that way.

Need beautiful business cards ASAP? Check out our reviews of the best business card services. For those with little design experienceâ€”or those who need to print a design easily and quicklyâ€”check out the top online business card printers to get maximum print quality and value. Standard dimensions for a business card are 3. If you do have bleed, you will have your bleed margins, as well as a 0. Use the Windows menu to open the sub menus for Characters, Paragraph, Layers, and more. With the paint bucket tool still selected, simply click anywhere on the canvas to fill the background with your selected color. Create a Footer To create a footer background color, simply repeat the steps of creating a new layer. Insert Text To insert new text in your document, repeat the steps to create a new layer. To move the text you have just typed, move your cursor down until it changes from a text cursor to an arrow, then click and drag the text. Re-size Image Depending on the size of your image, you may need to re-size it to fit on the card. Hover over one corner until you see the double sided arrow. To re-size proportionally, hold the shift key as you click the double arrow and drag to the desired size. To move the image, simply click and drag. Place Image Now that your image is sized and moved, you are ready to place it. Once you have placed the file, it automatically creates a new layer. Tweak Your Design Now that you have the basics, you can add more elements, create the back side of your business card, and enhance the elements that you have. Whenever you want to make a change to any layer, be sure to have that layer highlighted in the Layers window. Practice Makes Perfect Using Photoshop to create business cards will allow you to be creative while producing a finished product that looks professionally polished. As with any software, practice will help you fine-tune your Photoshop skills. Use the menus and the tools to test out Photoshop features, and draw inspiration from other designs to see if you can replicate something for yourself. Once you have the skills to make a business card, look for a good printer to bring your designs to fruition. You can take your Photoshop knowledge and apply it to other marketing materials for your business.

THROUGH LAYERS AND DIMENSIONS pdf

3: How To: Make A Business Card In Photoshop CS5 - www.enganchecubano.com

Likes, 19 Comments - Mashonda (@mashondatifrere) on Instagram: "That smile has layers and dimensions it's traveled journeys through storms that have transformed ".

You work with layers in the Layers panel. Layer groups help you organize and manage layers. You can use groups to arrange your layers in a logical order and to reduce clutter in the Layers panel. You can nest groups within other groups. You can also use groups to apply attributes and masks to multiple layers simultaneously. For example, an adjustment layer holds color or tonal adjustments that affect the layers below it. Rather than edit image pixels directly, you can edit an adjustment layer and leave the underlying pixels unchanged. A special type of layer, called a Smart Object, contains one or more layers of content. You can transform scale, skew, or reshape a Smart Object without directly editing image pixels. Or, you can edit the Smart Object as a separate image even after placing it in a Photoshop image. Smart Objects can also contain smart filter effects, which allow you to apply filters non-destructively to images so that you can later tweak or remove the filter effect. See Nondestructive editing and Work with Smart Objects. Video layers You can use video layers to add video to an image. After importing a video clip into an image as a video layer, you can mask the layer, transform it, apply layer effects, paint on individual frames, or rasterize an individual frame and convert it to a standard layer. Use the Timeline panel to play the video within the image or to access individual frames. See Supported video and image sequence formats. Photoshop Layers panel overview The Layers panel in Photoshop lists all layers, layer groups, and layer effects in an image. You can use the Layers panel to show and hide layers, create new layers, and work with groups of layers. You can access additional commands and options in the Layers panel menu. Photoshop Layers panel A. Choose a command from the Photoshop Layers panel menu Click the triangle in the upper-right corner of the panel. Change the size of Photoshop layer thumbnails Choose Panel Options from the Layers panel menu, and select a thumbnail size. Change thumbnail contents Choose Panel Options from the Layers panel menu, and select Entire Document to display the contents of the entire document. Turn off thumbnails to improve performance and save monitor space. Expand and collapse groups Click the triangle to the left of a group folder. See View layers and groups within a group. Filter Photoshop layers At the top of the Layers panel, the filtering options help you find key layers in complex documents quickly. You can display a subset of layers based on name, kind, effect, mode, attribute, or color label. Filter layers options in the Layers panel Choose a filter type from the pop-up menu. Select or enter the filter criteria. Click the toggle switch to switch layer filtering on or off. Convert background and Photoshop layers When you create a new image with a white background or a colored background, the bottommost image in the Layers panel is called Background. An image can have only one background layer. However, you can convert a background into a regular layer, and then change any of these attributes. When you create a new image with transparent content, the image does not have a background layer. The bottommost layer is not constrained like the background layer; you can move it anywhere in the Layers panel and change its opacity and blending mode. See Create layers and groups. Convert a Photoshop layer into a background Select a Photoshop layer in the Layers panel. Any transparent pixels in the layer are converted to the background color, and the layer drops to the bottom of the layer stack. You cannot create a background by giving a regular layer the name, Backgroundâ€”you must use the Background From Layer command. Turn the background layer into a regular layer Video tutorial: Turn the background layer into a regular layer Scott Kelby You can duplicate layers within an image or into another or a new image. Duplicate a Photoshop layer or group within an image Select a layer or group in the Layers panel. Do one of the following: Drag the layer or group to the Create a New Layer button. Duplicate a Photoshop layer or group in another image Open the source and destination images. From the Layers panel of the source image, select one or more layers or a layer group. Drag the layer or group from the Layers panel to the destination image. Select the Move tool , and drag from the source image to the destination image. The duplicate layer or group appears above the active layer in the Layers panel of the destination image. Shift-drag to move the image content to the same location it occupied in the source image if the source and destination images have the same pixel dimensions or to the

center of the document window if the source and destination images have different pixel dimensions. This method copies only pixels, excluding layer properties such as blending mode. Create a new document from a Photoshop layer or group Select a layer or group from the Layers panel. This means you can smudge or sample in a single layer. To smudge or sample pixels from all visible layers with these tools, select Sample All Layers from the options bar. Choose a size and color for the transparency checkerboard, or choose None for Grid Size to hide the transparency checkerboard.

THROUGH LAYERS AND DIMENSIONS pdf

4: The 12 Dimensions of Consciousness

The Dimensions of Consciousness. The third dimension is locked in a time/space and cause/effect paradigm through the individual human souls. auric layers or.

Photoshop CC has an updated Image Size dialog box. See Resizing images for more information. Resolution is the fineness of detail in a bitmap image and is measured in pixels per inch ppi. The more pixels per inch, the greater the resolution. Generally, an image with a higher resolution produces a better printed image quality. For example, if you change the resolution of a file, its width and height change accordingly to maintain the same amount of image data. Then change width, height, or resolution. As you change one value, the other two values change accordingly. With the Resample Image option selected, you can change the resolution, width, and height of the image to suit your printing or onscreen needs. Pixel dimensions equal document output size times resolution. Decreasing the resolution at same document size decreases pixel dimensions resampling. Position the pointer over the file information box, and hold down the mouse button. File size The file size of an image is the digital size of the image file, measured in kilobytes K , megabytes MB , or gigabytes GB. File size is proportional to the pixel dimensions of the image. Images with more pixels may produce more detail at a given printed size, but they require more disk space to store and may be slower to edit and print. Image resolution thus becomes a compromise between image quality capturing all the data you need and file size. Another factor that affects file size is file format. Similarly, color bit-depth and the number of layers and channels in an image affect file size. Photoshop supports a maximum pixel dimension of , by , pixels per image. This restriction places limits on the print size and resolution available to an image. About printer resolution Printer resolution is measured in ink dots per inch, also known as dpi. Most inkjet printers have a resolution of approximately to dpi. Technically, inkjet printers produce a microscopic spray of ink, not actual dots like imagesetters or laser printers. Printer resolution is different from, but related to image resolution. To print a high quality photo on an inkjet printer, an image resolution of at least ppi should provide good results. Screen frequency is the number of printer dots or halftone cells per inch used to print grayscale images or color separations. Also known as screen ruling or line screen, screen frequency is measured in lines per inch lpi â€”or lines of cells per inch in a halftone screen. The higher the resolution of the output device, the finer higher a screen ruling you can use. The relationship between image resolution and screen frequency determines the quality of detail in the printed image. To produce a halftone image of the highest quality, you generally use an image resolution that is from 1. But with some images and output devices, a lower resolution can produce good results. Screen frequency examples A. Very fine screen typically used for annual reports and images in art books Determine a suggested resolution for an image If you plan to print your image using a halftone screen, the range of suitable image resolutions depends on the screen frequency of your output device. Photoshop can determine a recommended image resolution based on the screen frequency of your output device. If your image resolution is more than 2. Save a copy of the file, and then reduce the resolution. For Screen, enter the screen frequency for the output device. If necessary, choose a different unit of measurement. Note that the screen value is used only to calculate the image resolution, not to set the screen for printing. For Quality, select an option: Draft Produces a resolution that is the same as the screen frequency no lower than 72 pixels per inch. Good Produces a resolution 1. Best Produces a resolution 2 times the screen frequency. View the print size onscreen Do one of the following: Select the Hand tool or Zoom tool, and click Print Size in the options bar. The image is redisplayed in its approximate printed size, as specified in the Document Size area of the Image Size dialog box. The Print Size command is not available in the Creative Cloud version. Resampling Resampling is changing the amount of image data as you change either the pixel dimensions or the resolution of an image. When you downsample decrease the number of pixels , information is deleted from the image. When you resample up increase the number of pixels, or upsample , new pixels are added. Resampled up selected pixels displayed for each set of images Keep in mind that resampling can result in poorer image quality. For example, when you resample an image to larger pixel dimensions, the image loses some detail and sharpness. Applying the Unsharp Mask filter to a resampled image can help refocus the image

details. You can avoid the need for resampling by scanning or creating the image at a sufficiently high resolution. Photoshop resamples images using an interpolation method to assign color values to any new pixels based on the color values of existing pixels. You can choose which method to use in the Image Size dialog box. Nearest Neighbor A fast but less precise method that replicates the pixels in an image. This method is for use with illustrations containing edges that are not anti-aliased, to preserve hard edges and produce a smaller file. However, this method can produce jagged effects, which become apparent when you distort or scale an image or perform multiple manipulations on a selection. Bilinear A method that adds pixels by averaging the color values of surrounding pixels. It produces medium-quality results. Bicubic A slower but more precise method based on an examination of the values of surrounding pixels. Using more complex calculations, Bicubic produces smoother tonal gradations than Nearest Neighbor or Bilinear. Bicubic Smoother A good method for enlarging images based on Bicubic interpolation but designed to produce smoother results. Bicubic Sharper A good method for reducing the size of an image based on Bicubic interpolation with enhanced sharpening. This method maintains the detail in a resampled image. If Bicubic Sharper oversharpens some areas of an image, try using Bicubic. You can specify a default interpolation method to use whenever Photoshop resamples image data. To maintain the current ratio of pixel width to pixel height, select Constrain Proportions. This option automatically updates the width as you change the height, and vice versa. Under Pixel Dimensions, enter values for Width and Height. To enter values as percentages of the current dimensions, choose Percent as the unit of measurement. The new file size for the image appears at the top of the Image Size dialog box, with the old file size in parentheses. Make sure that Resample Image is selected, and choose an interpolation method. If your image has layers with styles applied to them, select Scale Styles to scale the effects in the resized image. This option is available only if you selected Constrain Proportions. For best results when you produce a smaller image, downsample and apply the Unsharp Mask filter. To produce a larger image, rescan the image at a higher resolution. You can further manipulate the scale of the printed image using the Print command; however, changes you make using the Print command affect only the printed image, not the document size of the image file. If you turn on resampling for the image, you can change print dimensions and resolution independently and change the total number of pixels in the image. If you turn off resampling, you can change either the dimensions or the resolutionâ€”Photoshop adjusts the other value automatically to preserve the total pixel count. Then resample only as necessary. Change the print dimensions, image resolution, or both: To change only the print dimensions or only the resolution and adjust the total number of pixels in the image proportionately, select Resample Image and then choose an interpolation method. To change the print dimensions and resolution without changing the total number of pixels in the image, deselect Resample Image. To maintain the current ratio of image width to image height, select Constrain Proportions. This option automatically changes the width as you change the height, and vice versa. Under Document Size, enter new values for the height and width. If desired, choose a new unit of measurement. For Resolution, enter a new value. What affects file size? File size depends on the pixel dimensions of an image and the number of layers it contains. Images with more pixels may produce more detail when printed, but they require more disk space to store and may be slower to edit and print. You should keep track of your file sizes to make sure the files are not becoming too large for your purposes. If the file is becoming too large, reduce the number of layers in the image or change the image size. You can view the file size information for an image at the bottom of the application window.

THROUGH LAYERS AND DIMENSIONS pdf

5: Flow of Water Through Soil â€“ Permeability and Factors Affecting Permeability

Finished hole size- the diameter of the plated through hole after all plating steps are completed. Drilled hole size - the diameter of the hole after drilling. Capture pad - the pads placed on outer layers to "capture" the plated through hole or on inner layers to connect.

The center of this bilayer contains almost no water and excludes molecules like sugars or salts that dissolve in water. The assembly process is driven by interactions between hydrophobic molecules also called the hydrophobic effect. An increase in interactions between hydrophobic molecules causing clustering of hydrophobic regions allows water molecules to bond more freely with each other, increasing the entropy of the system. This complex process includes non-covalent interactions such as van der Waals forces , electrostatic and hydrogen bonds. Schematic cross sectional profile of a typical lipid bilayer. There are three distinct regions: Although the head groups are neutral, they have significant dipole moments that influence the molecular arrangement. Despite being only a few nanometers thick, the bilayer is composed of several distinct chemical regions across its cross-section. These regions and their interactions with the surrounding water have been characterized over the past several decades with x-ray reflectometry , [4] neutron scattering [5] and nuclear magnetic resonance techniques. The first region on either side of the bilayer is the hydrophilic headgroup. This portion of the membrane is completely hydrated and is typically around 0. In phospholipid bilayers the phosphate group is located within this hydrated region, approximately 0. One common example of such a modification in nature is the lipopolysaccharide coat on a bacterial outer membrane, [7] which helps retain a water layer around the bacterium to prevent dehydration. TEM image of a bacterium. The furry appearance on the outside is due to a coat of long-chain sugars attached to the cell membrane. This coating helps trap water to prevent the bacterium from becoming dehydrated. Next to the hydrated region is an intermediate region that is only partially hydrated. This boundary layer is approximately 0. Within this short distance, the water concentration drops from 2M on the headgroup side to nearly zero on the tail core side. In human red blood cells , the inner cytoplasmic leaflet is composed mostly of phosphatidylethanolamine , phosphatidylserine and phosphatidylinositol and its phosphorylated derivatives. By contrast, the outer extracellular leaflet is based on phosphatidylcholine , sphingomyelin and a variety of glycolipids, [12] [13] In some cases, this asymmetry is based on where the lipids are made in the cell and reflects their initial orientation. There, it is recognised by a macrophage that then actively scavenges the dying cell. Lipid asymmetry arises, at least in part, from the fact that most phospholipids are synthesised and initially inserted into the inner monolayer: Flippases are members of a larger family of lipid transport molecules that also includes floppases, which transfer lipids in the opposite direction, and scramblases, which randomize lipid distribution across lipid bilayers as in apoptotic cells. In any case, once lipid asymmetry is established, it does not normally dissipate quickly because spontaneous flip-flop of lipids between leaflets is extremely slow. Certain types of very small artificial vesicle will automatically make themselves slightly asymmetric, although the mechanism by which this asymmetry is generated is very different from that in cells. This asymmetry may be lost over time as lipids in supported bilayers can be prone to flip-flop. The lipids with an unsaturated tail blue disrupt the packing of those with only saturated tails black. The resulting bilayer has more free space and is, as a consequence, more permeable to water and other small molecules. Lipid bilayer phase behavior At a given temperature a lipid bilayer can exist in either a liquid or a gel solid phase. All lipids have a characteristic temperature at which they transition melt from the gel to liquid phase. In both phases the lipid molecules are prevented from flip-flopping across the bilayer, but in liquid phase bilayers a given lipid will exchange locations with its neighbor millions of times a second. This random walk exchange allows lipid to diffuse and thus wander across the surface of the membrane. The phase behavior of lipid bilayers is determined largely by the strength of the attractive Van der Waals interactions between adjacent lipid molecules. Longer-tailed lipids have more area over which to interact, increasing the strength of this interaction and, as a consequence, decreasing the lipid mobility. Thus, at a given temperature, a short-tailed lipid will be more fluid than an otherwise identical long-tailed lipid. An unsaturated double bond can produce a kink in the alkane chain,

disrupting the lipid packing. This disruption creates extra free space within the bilayer that allows additional flexibility in the adjacent chains. Most natural membranes are a complex mixture of different lipid molecules. If some of the components are liquid at a given temperature while others are in the gel phase, the two phases can coexist in spatially separated regions, rather like an iceberg floating in the ocean. This phase separation plays a critical role in biochemical phenomena because membrane components such as proteins can partition into one or the other phase [23] and thus be locally concentrated or activated. One particularly important component of many mixed phase systems is cholesterol , which modulates bilayer permeability, mechanical strength, and biochemical interactions. Surface chemistry[edit] While lipid tails primarily modulate bilayer phase behavior, it is the headgroup that determines the bilayer surface chemistry. Most natural bilayers are composed primarily of phospholipids , but sphingolipids and sterols such as cholesterol are also important components. Other headgroups are also present to varying degrees and can include phosphatidylserine PS phosphatidylethanolamine PE and phosphatidylglycerol PG. These alternate headgroups often confer specific biological functionality that is highly context-dependent. For instance, PS presence on the extracellular membrane face of erythrocytes is a marker of cell apoptosis , [26] whereas PS in growth plate vesicles is necessary for the nucleation of hydroxyapatite crystals and subsequent bone mineralization. This barrier takes the form of a lipid bilayer in all known life forms except for a few species of archaea that utilize a specially adapted lipid monolayer. The nucleus, mitochondria and chloroplasts have two lipid bilayers, while other sub-cellular structures are surrounded by a single lipid bilayer such as the plasma membrane, endoplasmic reticula, Golgi apparatus and lysosomes. Many prokaryotes also have a cell wall , but the cell wall is composed of proteins or long chain carbohydrates , not lipids. In contrast, eukaryotes have a range of organelles including the nucleus , mitochondria , lysosomes and endoplasmic reticulum. All of these sub-cellular compartments are surrounded by one or more lipid bilayers and, together, typically comprise the majority of the bilayer area present in the cell. In liver hepatocytes for example, the plasma membrane accounts for only two percent of the total bilayer area of the cell, whereas the endoplasmic reticulum contains more than fifty percent and the mitochondria a further thirty percent. In response to a molecule such as a hormone binding to the exterior domain blue the GPCR changes shape and catalyzes a chemical reaction on the interior domain red. The gray feature is the surrounding bilayer. Neurotransmission and Lipid raft Probably the most familiar form of cellular signaling is synaptic transmission , whereby a nerve impulse that has reached the end of one neuron is conveyed to an adjacent neuron via the release of neurotransmitters. This transmission is made possible by the action of synaptic vesicles loaded with the neurotransmitters to be released. These vesicles fuse with the cell membrane at the pre-synaptic terminal and release its contents to the exterior of the cell. The contents then diffuse across the synapse to the post-synaptic terminal. Lipid bilayers are also involved in signal transduction through their role as the home of integral membrane proteins. This is an extremely broad and important class of biomolecule. It is estimated that up to a third of the human proteome may be membrane proteins. The HIV virus evades the immune system in part by grafting these proteins from the host membrane onto its own surface. A classic example of this is phosphatidylserine -triggered phagocytosis. Normally, phosphatidylserine is asymmetrically distributed in the cell membrane and is present only on the interior side. During programmed cell death a protein called a scramblase equilibrates this distribution, displaying phosphatidylserine on the extracellular bilayer face. The presence of phosphatidylserine then triggers phagocytosis to remove the dead or dying cell. Characterization methods[edit] Human red blood cells viewed through a fluorescence microscope. The cell membrane has been stained with a fluorescent dye. The two dark bands around the edge are the two leaflets of the bilayer. Historically, similar images confirmed that the cell membrane is a bilayer The lipid bilayer is a very difficult structure to study because it is so thin and fragile. In spite of these limitations dozens of techniques have been developed over the last seventy years to allow investigations of its structure and function. Electrical measurements are a straightforward way to characterize an important function of a bilayer: By applying a voltage across the bilayer and measuring the resulting current, the resistance of the bilayer is determined. This resistance is typically quite high Ohm-cm2 or more [35] since the hydrophobic core is impermeable to charged species. The presence of even a few nanometer-scale holes results in a dramatic increase in current. Lipid bilayers

cannot be seen in a traditional microscope because they are too thin. In order to see bilayers, researchers often use fluorescence microscopy. A sample is excited with one wavelength of light and observed in a different wavelength, so that only fluorescent molecules with a matching excitation and emission profile will be seen. Natural lipid bilayers are not fluorescent, so a dye is used that attaches to the desired molecules in the bilayer. Resolution is usually limited to a few hundred nanometers, much smaller than a typical cell but much larger than the thickness of a lipid bilayer. The pits are defects in the bilayer, exposing the smooth surface of the substrate underneath. Electron microscopy offers a higher resolution image. In an electron microscope , a beam of focused electrons interacts with the sample rather than a beam of light as in traditional microscopy. In conjunction with rapid freezing techniques, electron microscopy has also been used to study the mechanisms of inter- and intracellular transport, for instance in demonstrating that exocytotic vesicles are the means of chemical release at synapses. A new method to study lipid bilayers is Atomic force microscopy AFM. Rather than using a beam of light or particles, a very small sharpened tip scans the surface by making physical contact with the bilayer and moving across it, like a record player needle. AFM is a promising technique because it has the potential to image with nanometer resolution at room temperature and even under water or physiological buffer, conditions necessary for natural bilayer behavior. Utilizing this capability, AFM has been used to examine dynamic bilayer behavior including the formation of transmembrane pores holes [38] and phase transitions in supported bilayers. Because of this, the same scan can image both lipids and associated proteins, sometimes even with single-molecule resolution. This has been used to characterise the degree of order and disruption in bilayers using dual polarisation interferometry to understand mechanisms of protein interaction. Lipid bilayers are complicated molecular systems with many degrees of freedom. Thus atomistic simulation of membrane and in particular ab initio calculations of its properties is difficult and computationally expensive. Quantum chemical calculations has recently been successfully performed to estimate dipole and quadrupole moments of lipid membranes. This effect is particularly pronounced for charged species, which have even lower permeability coefficients than neutral polar molecules. When a cell or vesicle with a high interior salt concentration is placed in a solution with a low salt concentration it will swell and eventually burst. Such a result would not be observed unless water was able to pass through the bilayer with relative ease. The anomalously large permeability of water through bilayers is still not completely understood and continues to be the subject of active debate. This applies both to fats and organic solvents like chloroform and ether.

THROUGH LAYERS AND DIMENSIONS pdf

6: Printed Circuit Board Design Tolerances | Advanced Circuits

This section of the preview chapter, Creating Dynamic Maps from QGIS Python Programming CookBook takes a look at how to control an object through the Map Canvas, change map units, and how to loop through map layers.

You should see something that looks like the image on the left. These are the default settings for Blender Internal. This requires different objects to be on different scene layers, and each scene layer usually has its own render layer though this is arbitrary. You then would have an AO pass in addition to the combined render. You could then multiply the AO pass over the footage in the compositor in order to make shadows from Blender appear in your footage. If you had separated your image into different color passes then you could edit each color pass to make the colors match the footage. The dimension settings are pretty simple: This button performs the same action as the F12 button. These are explained in detail below: Lights will cast shadows. If this is turned off, nothing will cast a shadow. To see this, add a plane below your default cube and render. Now turn this button off and see how there are no shadows. Use the environment map. This enables panoramic rendering. For more on panoramic rendering, see Panorama Settings Ray: This enables Ray Tracing. Turn it off, and render the same images as I talked about in the description of the Shadow button. It also has something to do with shadows. This stands for Radiosity. These will set the renderer to render at the specified percent of the resolution that you have set. This is an easy way to make a quick render. These buttons change the number of boxes that Blender will render in total. Play around with these to see how they change the number of small boxes in the render window when you render. Right below it are two buttons, Do Sequence and Do Composite. The Do Sequence button will render your animation with any effects you have done in the Sequence Editor and the Do Composite button will render an animation with your composite node work included. The default setting is that your animation will start at frame 1, and will end at frame

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7: convolution - Fully-connected layer weight dimensions in TensorFlow ConvNet - Stack Overflow

Recommended Design Rules and Strategies for BGA Devices (for inner layers). The typical dimensions of FPGA ball pads and vias for mm pitch through Figure

Click her e if you want to view the old version. Explanation follows A kingdom is an archetype of nature. The task of the elemental gods is to divide all categories of life into seven archetypal Kingdoms of nature or groups of nature. Read about the Elementals at the web page below. A dimension is a state of consciousness and a means of organizing different planes of existence according to the vibratory rate of that which exists. Each dimension has certain sets of laws and principles that are specific to the frequency of that dimension. Circular Time Theory states that over a very long period of time things will repeat. Over a very long period of time things will repeat almost exactly. All human beings are multi-dimensional beings of light with a visible dense physical body which some of their consciousness has been projected into, and have the potential to access the first 5 dimensions. Usually many of us are comfortable with our awareness being at 3-D level, but with spiritual application i. Indigos and Crystals can access the 4th, 5th, 6th and 7th dimensions. Some Crystals can access the higher dimensions. Click on the link below and scroll down the web page until you see a Table showing the detailed qualities of the 5 dimensions with reference to human beings. Referring to Table 2 above, rocks, plants, animals and human beings are obviously 3-D forms. Please note that Table 2 refers to dimensional awareness rather than to spatial dimensions. For example, a plant is matter existing in 3 dimensions with width, height and breadth but it has a "consciousness" or awareness of the 2nd dimension only. Likewise, human beings have 3-D consciousness, but some can access the 4th dimension and higher levels of consciousness. Evolved human beings, or "Star People" whose origins are from a star or star system within or outside our Galaxy and human beings whom have applied themselves to spiritual studies, can gain awareness of the 4-D and 5-D worlds or perspectives. Globally, all of Earth and its inhabitants is moving toward a shift into the 5th dimension which is transcendence over space-time. There are usually described 27 rays. They are abstract cosmic principles or energies which radiate from the Divine God and are said to motivate manifested forms according to at least twenty seven principles. The Rays activate the expression of their energies in each of the dimensions. Each of us belongs fundamentally to just one ray, but we also possess minor qualities of other rays which help to form individual characters. The Higher Self relates to one of the rays. Their Higher Self is on the Indigo blue ray, with their consciousness firmly anchored in the 5th dimension. They are called to tap into the 6th and 7th dimensions. Crystals are born on the third ray Gold ray with their consciousness in the 6th dimension, and are called to tap into, and open up to the 7th, 8th, and 9th dimensions.. The Ray energy of your soul is the sum of the qualities only you know you possess. Your ray is your true spiritual motivation. The first 7 rays are solar rays manifested on Earth. The 8th to 12 rays are the galactic rays resonating to the harmonics of Our galaxy and universe resonate to the harmonics or frequencies of 12, while Earth resonates to the frequencies of 7. See information on Sacred Geometry and numerology also. The influence of the 8th to 12 rays has lately manifested on Earth, while the higher rays to ray 27 and above are manifested outside of our solar system. Some say that the rays above ray 12 have been anchored on Earth but not yet manifested. For further information, see the following website: Our major chakras are numerically related to both the Seven Rays and the Seven Planes. The First Ray works with the Crown chakra to activate the Base chakra, and the other rays follow this same scheme, e. Click here for a diagram of the relationship of the rays with the chakras See the website below for an explanation of the relationship between the rays and chakras Planes constitute the physical and the higher etheric levels of existence in our solar system. The personality relates to one of the planes. The concept of an individualized personality is found in the lower three planes, the Physical, Astral and Manas Mental planes. For more information about the planes, see the links below. The individualised personality is rooted in the physical plane and can be also be experienced in the astral and mental planes, but usually not beyond those. The Buddhic plane is the plane of true spiritual insight and intuition not ordinary psychic feeling, which is astral and the plane of all encompassing love and unity. The Akashic records which contain the history and sum total of the past of

everything everywhere are ultimately on this level of unification. Beyond any type of matter, dimension, or evolution as we can think of, the Monadic Plane is the plane of "will" where monads, the ultimate divine spiritual spark in all living things, express themselves and evolve and create on the lower planes. A "Logos" can be thought of as a vast deity which has the ability to be a Creator, i. The great beings who are main planets, stars, galaxies, and beyond are "on this level". The planes work in a system and they inter-penetrate each other fully. They are not "parallel dimensions" or separate identities. They are not layered on top of each other but rather within each other, and not in the way that you would imagine an onion skin, but more along the lines of two exact things being in the same place at the same time. Some say each of the 7 solar planes has a cosmic equivalent and we have up to soul extensions 12 soul extensions which each project up to 12 souls incarnated into etheric or physical form which move through initiations through each of the 7 solar planes. Furthermore, it is said that the 7 solar planes are actually sub-sets of a cosmic physical plane! The cosmic astral and higher planes are purely abstract and not manifested. The cosmic astral and higher cosmic planes of pure "thought" or consciousness are where the "planning" is done or where creation springs from. For more information visit the websites below.

THROUGH LAYERS AND DIMENSIONS pdf

8: PCB Manufacturer | Standard PCB

The permeability of the top and bottom layers is 2 x cm/s and that of middle layer is x cm/s. Find the equivalent permeability in the horizontal and vertical direction and their ratio. Find the equivalent permeability in the horizontal and vertical direction and their ratio.

History[edit] Through-hole devices mounted on the circuit board of a mids home computer. Axial-lead devices are at upper left, while blue radial-lead capacitors are at upper right Through-hole technology almost completely replaced earlier electronics assembly techniques such as point-to-point construction. From the second generation of computers in the s until surface-mount technology SMT became popular in the late s, every component on a typical PCB was a through-hole component. PCBs initially had tracks printed on one side only, later both sides, then multi-layer boards were in use. Through holes became plated-through holes PTH in order for the components to make contact with the required conductive layers. Plated-through holes are no longer required with SMT boards for making the component connections, but are still used for making interconnections between the layers and in this role are more usually called vias. Axial leads protrude from each end of a typically cylindrical or elongated box-shaped component, on the geometrical axis of symmetry. Axial-leaded components resemble wire jumpers in shape, and can be used to span short distances on a board, or even otherwise unsupported through an open space in point-to-point wiring. Axial components do not protrude much above the surface of a board, producing a low-profile or flat configuration when placed "lying down" or parallel to the board. Originally, radial leads were defined as more-or-less following a radius of a cylindrical component such as a ceramic disk capacitor. When placed on a board, radial components "stand up" perpendicular, [3] [4] occupying a smaller footprint on sometimes-scarce "board real estate", making them useful in many high-density designs. The parallel leads projecting from a single mounting surface gives radial components an overall "plugin nature", facilitating their use in high-speed automated component insertion "board-stuffing" machines. Components like integrated circuits can have upwards of dozens of leads, or pins When needed, an axial component can be effectively converted into a radial component, by bending one of its leads into a "U" shape so that it ends up close to and parallel with the other lead. Conversely, a radial component can be pressed into service as an axial component by separating its leads as far as possible, and extending them into an overall length-spanning shape. These improvisations are often seen in breadboard or prototype construction, but are deprecated for mass production designs. This is because of difficulties in use with automated component placement machinery , and poorer reliability because of reduced vibration and mechanical shock resistance in the completed assembly. Multiple lead devices[edit] For electronic components with more than two leads, for example ICs or resistor packs, various semiconductor packages such as single or dual in-line packages are used, either directly onto the PCB or via a socket. Characteristics[edit] A box of drill bits used for making holes in printed circuit boards. While tungsten-carbide bits are very hard, they eventually wear out or break. Making holes is a considerable part of the cost of a through-hole printed circuit board. While through-hole mounting provides strong mechanical bonds when compared to SMT techniques, the additional drilling required makes the boards more expensive to produce. They also limit the available routing area for signal traces on layers immediately below the top layer on multilayer boards since the holes must pass through all layers to the opposite side. To that end, through-hole mounting techniques are now usually reserved for bulkier or heavier components such as electrolytic capacitors or semiconductors in larger packages such as the TO that require the additional mounting strength, or for components such as plug connectors or electromechanical relays that require great strength in support. However, high-speed or high-frequency designs may require SMT technology to minimize stray inductance and capacitance in wire leads, which would impair circuit function. Ultra-compact designs may also dictate SMT construction, even in the prototype phase of design.

THROUGH LAYERS AND DIMENSIONS pdf

9: Get painted area dimensions of a layer through Photoshop Javascript - Stack Overflow

Photoshop layers are like sheets of stacked acetate. You can see through transparent areas of a layer to the layers below. You move a layer to position the content on the layer, like sliding a sheet of acetate in a stack.

For the Stub Via A example, it shows the through portion starting from the top layer and ending at some inner layer. The stub portion is the remaining portion continuing from the inner layer junction to the bottom layer. In this scenario, there are two stubs. The first stub is from the first internal layer junction to the top layer; the second stub is from the second internal layer junction to the bottom layer. Through Via Through vias are the oldest and simplest via configurations originally used in layer PCB designs. Since the signals originate and terminate from the outer layers of the PCB, there are no stubs. In multi-layer PCB applications, they are an inexpensive way to eliminate the resonance effects caused by stubs where other mitigation techniques are not practical or are too expensive. A Blind Via connects one or more internal layers to only one external layer. Controlled-depth drilling is used to form the holes prior to plating. A buried via, on the other hand, is a plated hole which is completely buried within the board. It connects one or more internal layers and does not connect to an external layer. Using buried via technology is costly because the inner layers being interconnected need to be fully fabricated and plated before final lamination of the entire PCB. A micro-via is a form of blind via. Because the holes are so small 0. Back-drilled Via High speed point-point serial link based backplanes are often thick structures; due to the system architecture and card-card interconnect requirements. Back-drilling is a process to remove the stub portion of a PTH via. It is a post-fabrication drilling process where the back-drilled hole is of larger diameter than the original PTH. This technology is often used instead of blind-via technology to remove the stubs of connector vias in very thick high-speed backplane designs. State of the art board fabrication shops are able to back-drill to within 8 mils of the signal layer to keep, so there will always be a small stub portion attached to the via. Back-drilling is not without limitations. Smaller vias and tighter pitch driven by large pin count BGA packages makes back-drilling impractical in these applications; due to drill bit size and tolerance issues. Fortunately, smaller via diameters limit the maximum PCB thickness due to aspect ratio; thereby limiting the length of the stub to the board thickness. Careful planning the high-speed layers within the stack-up is one way to control stub length. We worry about stubs in high-speed designs because they cause unwanted resonant frequency nulls which appear in the insertion loss plot of the channel. If one of these frequency nulls happen to line up at or near the Nyquist frequency of the bit rate, the received eye will be devastated resulting in a high bit-error-rate; even link failure. A shorter stub length means these resonances will be pushed out further in frequency; ideally past the 5th harmonic of the Nyquist frequency as a rule of thumb. Rules of thumb, in general, are no substitute for actual modeling and simulation. You should never depend on them to sign-off the final design; but you can use them to gain some intuition before hand. With that in mind, you can estimate the maximum stub length in inches using the following equation: Depending on just how much longer it is means there will be less than optimum eye opening at the receiver. If you know the length of the stub, you can predict the fundamental resonant frequency, using the following equation: If we assume this is the 5th harmonic, then the Nyquist frequency is approximately 2.

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