euro
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EUROPHOTOMATH 2021, 1º Premio_

Endless corridor
ES Den Haag Rijnlands Lyceum

This image shows two mirrors facing each other. They are reflecting the images in the opposite mirror. This represents exponential decay.
The two variables would be the number of reflections (x-axis) and the size of the reflection (y-axis). As you increase the number of reflections, the size of the image decreases.
If the mirrors were perfectly parallel and reflective this "corridor" would be infinite, however even with some of the best mirrors we would only be able to see a few hundred images since the light doesn't travel far enough for our eyes or cameras to capture.
Theoretically in the graph the line should never cross the x-axis meaning the size of the image should never reach zero. The exponential decay can be calculated with the following formula:

$y(t) = a \times e^{-kt}$ (t-> time, y(t)-> value at time, a-> value at start, k-> rate of decay)

EUROPHOTOMATH 2021, 2º Premio_

Un Reflejo Matemático
ES Alicante

Esta fotografía la tomé en mi viaje a Shanghái en el 2018. En la que se pueden observar múltiples referencias hacia las matemáticas. Desde la inversión del Jin Mao sobre el Shanghai World Financial Center, la suma de elementos diferenciales que configura la función completa; la suma de las ventanas configura la función, que es el edificio reflejado. Hasta el punto de fuga o las líneas paralelas. Un reflejo matemático.

EUROPHOTOMATH 2021, 3º Premio_

Circles of Light
ES Den Haag Rijnlands Lyceum

This picture was taken at my house by simply turning the light on. With this picture, we can prove that math are everywhere in our daily life. On this picture we can see three circles: a small one, a medium one and a big one. By finding the radius or the diameter of the big one or the small one, we can find the radius/diameter of the other one as the diameter of the small circle is equivalent to the radius of the big circle and vice-versa. So, if the radius of the small circle is equivalent to 10cm, its diameter is 20cm and so the radius of the big circle is 20cm and its diameter is 40cm. Now onto the medium circle, as it is "medium" it is situated between the small and the big circle so the big circle is times 2 the small one, the medium one will be times 1,5. So then the radius of the medium one is 15cm and the diameter is 30cm. Using this data, we can now find the circumference of all three of the circles, and find the total length needed of LED strip for the whole lamp. So about 282,74cm.

EUROPHOTOMATH 2021, 5º Premio_

Reality is Just an Illusion
ES Parma

By viewing something from a different perspective you understand it more completely: this is the essence of mathematics.
This upside-down picture of a fountain in the background gives us a shift in perspective.
With the geometrical shapes of an ellipse and two arcs of a parabola, this picture creates a harmonical mathematical effect: symmetry, patterns, geometrical shapes are what make the world beautiful.
The refracted image looks completely different and yet the same as the real image in the background.
Mathematics is just like this: it explains things relating them to other things.

An equal sign, in the end, is just a metaphor, an analogy between 2 entities.

EUROPHOTOMATH 2021, 4º Premio_

72
ES Bruselas IV

In this image we can see the biblical Tetragrammaton that makes up the proper name of God.
A specific aspect of the Hebrew language is that each letter has a numerical value.
This gematria representation creates a relation between the common value of יהוה that is 26 calculated with י = 10; ה = 5; ו = 6; and another important value in the Scriptures "72" calculated with 4x10 + 3x5 + 2x6 + 1x5.
This triangle could be classified as a Jewish tetractys with the letters of the Tetragrammaton inscribed on the ten positions of the triangle.
The fire around the triangle recalls the episode in the Book of Exodus when Yahweh presents himself to Moses and says: "I am who I am" from which derives the Tetragrammaton.