# IB TOK 12    Mathematics and Beauty

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Do you believe in the theories that equate mathematics and beauty? Why or why not? What are the implications of your judgement?

"Beauty is in the eye of the beholder." Cliché, yes; but it has never been more true. Beauty, even today, is purely subjective and interpretations vary vastly from person to person, region to region, and era to era. The Taj Mahal, one of the most exquisite pieces of architectural ingenuity in the history of the world is considered "beautiful" by tourists who come flocking to the city of Agra, and yet this beauty evokes a sense of dejection and mournfulness to those who know about its deep-rooted history where it should have brought good-humoured feelings and reminiscences.

Mathematics, in its truest form, is a very elaborate yet accurate description of a precise set of rules and regulations that objects around us tend to adhere to. An "elegant theorem" is thus neither too far off nor too abstract to perceive and comprehend. There can be universally "sexy" derivations or hypotheses (Riemann's), and there can be nasty-looking fractals too. This quantification of beauty in Math is, for the most part, unanimously agreed upon within the scientific community.

What then is to be said about the popular theories that inadvertently equate mathematics and beauty? The golden ratio, I assert, is a fluke of kinds where one mistakenly twists the very definitions of beauty and mathematics. One runs into a steep slippery slope of sorts when making such an all-encompassing claim. All beautiful people may indeed follow the golden ratio, just as the seemingly random beauty of our palms follow rigid patterns; however, not all people who follow the golden ratio are beautiful, and of course, people whose android ratios aren't golden can be beautiful too.

In making this judgement, I imply that mathematical beauty and beauty beauty are neither interconnected nor symbiotic. Facial beauty, for instance, does not follow any established norms. Mere measurements, ratios and calculations would not be capable of affirming an object's or person's beauty. To sum it all up, math can be beauty, but beauty not math. If it were, we would be facing the unfortunate consequence of having to consider people with triangular- or hexagonal-shaped faces "beautiful."