

# MATHEMATICS

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Freemasonry uses mathematical symbols as well as natural ones. The mathematics of Freemasonry would require a book for their adequate presentation, but two of her greatest mathematical symbols belong so aptly together, though separated widely in her ritual that they will be considered side by side by the interested student.

These are the number "Three," and the Forty-Seventh Problem of Euclid.

Both of these demonstrate Deity with mathematics, a feat which no mathematician would dare, but which any well-informed Freemason finds sufficiently easy!

The emphasis placed upon the number "Three" in Freemasonry is so great that, apparently, the founders and developers of our modern ritual did not find it necessary to offer any monitorial explanation of it as a symbol. Yet it is a great and important symbol; generations of philosophers have striven for an adequate compilation of all of its ramifications. It is not on record that any authority has yet said "This is the end of the symbolism."

It is neither necessary nor desirable to compile the ancient references to trinity; from the oldest known and recorded (that of the Brahmins), to the modern Christian Trinitarian doctrine, the religions of the world of all peoples and all lands have stressed the tri-part nature of God.

There is "Three" throughout nature. Earth, water, air; father, mother, child; sunrise, noon, sunset; seed, flower fruit; sowing, growing, reaping; Man must early have learned of three, and nature's insistence upon three.

And there is three throughout Freemasonry; three degrees, three principal officers; three original Grand Masters; three lesser lights; three great lights; three movable jewels' three immovable jewels, three of fifteen who traveled in a westerly direction; three raps; three gates; three circuits in circumambulation; three steps on the Master's Carpets; three steps in Masonry, three pillars supporting; three, three, three!

We are taught of Wisdom, Strength and Beauty; and some have been confused by the inclusion of a word meaning pulchritude; and some initiates think it refers to form and face, and is there effeminate. But sex does not here enter the symbolism; in wisdom, strength and beauty the philosopher finds reference to mind, body and spirit; which support our institution. But there is much more to this symbolism than support; it is at once a plea, a command, an exhortation and a prayer; that our institution be supported by the best of wisdom, the greatest of strength and the most blinding of beauty.

See how this blends with the "Doctrine of the perfect youth" over which Masonic jurists quarrel in the most friendly fashion to this day (nor have all Grand Lodges settled the matter, even for themselves). Unquestionably a maimed man may have a fine brain; one thinks at once of

Steinmetz, one of the greatest scientists this world has ever known, whose achievements will be ranked among the very highest, as history assigns him his true place. Steinmetz had an ugly, misshapen body; he was frail and humpbacked, but his mind was wonderful. Yet how much more wonderful might have been his achievements had his maimed and twisted body been straight and tall, the enormous power of mind backed up by a health which would have carried him to four score and ten!

We do not admit to our Fraternity the maimed, the halt, the blind, the imperfect; the literalist insists because of the impossibility of those so afflicted conforming to the outward requirements. But the esoteric philosopher finds in the ancient doctrine of a perfect youth a support, a foundation, perhaps a buttress of the pillar strength, and passes on his wisdom to practical application; that A Freemason, other things being equal, is the best whose health and strength fit him for great tasks, greatly done.

There is need of wisdom in any world; especially is there need of wisdom in one torn by dissension, riven by differences, swept by passion and dismembered by prejudice. It is one of the hopes of that same distempered world that Freemasonry, by her teaching of that especial wisdom which deals with human relations may pour the oil of brotherhood upon the tempestuous seas of discord and misunderstanding. The pillar of wisdom is a vital support of Freemasonry, as of civilization.

The pillar of beauty is a symbol of spirituality. It is beauty of the soul, not of body. It is loveliness of thought, not of limb. It is the blinding magnificence of our inner conception of the inconceivable . . . The Grand Lodge Above . . . not a beauty of the earth, earthy. Strength without wisdom is brutality. Wisdom without soul is fact without mercy, justice, charity or love. Wisdom and strength are vitally important supports, but the lodge would fall and the Fraternity be no more, if the third support were taken away. Wisdom, Strength and Beauty; the three Lesser Lights, the stations of the three principal officers, all form triangles. The Lodge, an "oblong square" represents the world, perhaps the universe. But the triangle represents God.

It does represent Him because some man once said, "Here is a curious three sided figure, lets say it looks like God!" Symbols do not thus spring into being. The triangle always has been a representation of God; from the dawn of history the three-sided figure has been representation of man's conception of The Most High.

It is not difficult to imagine why. To all mankind deity has been visualized as perfect. He is also conceived of as First; before all else. The first words in the Old Testament are, "In the Beginning, God . . ."

A point is nothing but an idea. That which connects two points is a line. But a line has a beginning and an ending. Man's idea of God is of One without a beginning or ending. Two lines cannot make a figure without a beginning or an ending. They form a cross or an angle, but always there is the sense of imperfection, of something wanting. But when three lines form a triangle, it is without either a beginning or ending. And it is the first possible complete figure which can be constructed of straight lines. It is not both logical and beautiful that the First

Perfection which Geometry can show should have stood, and still stands, as a symbol of Him from Whom Geometry (Freemasonry came)?

This, then, is the reading of the number "Three" throughout Freemasonry; it is a symbol that the Great Architect is everywhere; that we can move not, work not, live not or love not without we do so beneath His All-Seeing Eye, and as workmen in His Quarry. Everywhere, in every degree, is three, three, and yet more threes. Everywhere, throughout all life, is God, God and yet more of the omnipresence of God.

Everywhere, through out the three degrees, threes preach the inextricable inter-weaving of the philosophy, the meaning and the glory of freemasonry with her gentle, tender and wholly reverent idea of the Great Architect of the universe.

So much for the number three. As the child begins the study of arithmetic with simple digits and gradually progresses through mensuration of all sorts to algebra and finally, in high school, to geometry; so the Freemason meets his first Masonic mathematics in the number three, and gradually learns more and more of the gracious mensuration of the Craft until he is invited to study the geometrical Forty-Seventh Problem of Euclid.

The Forty-Seventh Problem of Euclid is older than Pythagoras. The Sublime degree of Master Mason as we know it is younger than Pythagoras by many hundreds of years. Our Rituals are accurate in neither date nor fact; and yet of all the symbols of Freemasonry the Forty-Seventh Problem is one of the most beautiful and most filled with meaning.

For the benefit of those who may have forgotten their geometry days, the Forty-Seventh Problem is here simply stated; in any right triangle, the sum of the squares of the two sides is equal to the square of the hypotenuse. This is demonstrably true regardless of the length of either side. But in the Problem as diagrammed in the lodge, and for simplicity's sake it is usually shown with sides the proportions of which are as three, and four units when the hypotenuse, or longest side of the triangle will be as five units. If one draws on paper a line three inches long, and at right angles to it, and joined to one end, a line four inches long, then the line connecting the two ends will be five inches long when the angle is a perfect right angle, or one of ninety degrees. The square of 3 is 9. The square of 4 is 16. The sum of 9 and 16 is 25. The square root of 25 is 5.

We are taught but little about this Problem in our Rituals, and, as stated, much of what we are taught is wrong! We are instructed that it was invented by Pythagoras, that he was a Master Mason, that he was so delighted with his invention that he exclaimed "Eureka" (I have found it), that he sacrificed a heca-tomb, and the Problem "Teaches Masons to be general lovers of the arts and sciences." Why so great and awe-inspiring a symbol should receive such scant attention is not our problem. Perhaps it is because the fathers of the ritual thought it beyond the grasp of many and so better left for the individual to follow if he would. Certain it is that he who will think on this problem will find a rich reward.

How came this wonder to be? What is the magic of 3 and 4 and 5? (or 6 and 8 and 10, or 36 and 64 and 100, or any other set of numbers of the same relationship)? Why is the sum of the squares of the two lesser always equal to the square of the greater? What is the mystery which always

works out so that, no matter what the length of any two sides, so be it they are at right angles, the line joining their free ends will have a square equal to the sum of the other two squares? If one line be 7.6954 inches long, and the other 19 miles, 573,5732 feet long, the sum of the squares of these numbers will be the square of the length of the line joining their free ends, if, and only if, the two lines are at right, or ninety degree, angles.

With this certainty, man reaches out into space and measures the distance of the stars! With this knowledge he surveys his land, marks off his boundaries, constructs his railroads and builds his cathedrals. When he digs a tunnel through a mountain, it is the Forty-Seventh Problem of Euclid by which he measures so that the two parties digging toward each other meet in the center of the mountain, having dug a straight tunnel. With this knowledge man navigates the ocean, and goes serenely and with perfect confidence upon a way he cannot see, to a port he does not know; more, with this problem he locates himself in the middle of the ocean so that he knows just how far he has come and whither he goes!

If we put down the squares of the first four numbers; thus, 1, 4, 9, 16; we can see that by subtracting each square from the next one we get 3, 5, and 7; which are the steps in Masonry, the steps in the Winding Stair, the brethren which form Entered Apprentice, Fellowcraft and Master Mason Lodges, which are, in other words, the sacred numbers.

These have been the sacred numbers from the dawn of history. Always they have held meanings for those who attached a significance of spiritual import to mathematics. Always they have been symbols of the interrelation of science, knowledge, exploration, building; and God, religion, worship and morality.

Many will find presumption in any attempt to read a symbol which so great an authority as Albert Pike said had an unknown meaning (page 789, *Morals and Dogma*). Yet, if none presumes, from whence can individual progress come? The same authority declared it the inalienable privilege of any Mason to interpret the symbols of Masonry for himself. Therefore, a reading is here dared!

So far as we know . . . and while we cannot prove it by mathematics, the strongest of circumstantial evidence leads us to believe . . . the fundamentals of mathematics are true, not only in this world, but in all worlds. Our finite minds cannot think of a world or a universe in which two and two make other than four, or in which the relation of the circumference of a circle to its diameter is other than 3.1416 plus. It is axiomatic to us that if the sum of the squares of the two sides of a right angled triangle are equal to the square of the hypotenuse is a truth here, it is a truth everywhere. This particular mathematical truth is so perfect, so beautiful, so inevitable and so fitting to the art an science of Freemasonry, the founders of our beloved Order must have chosen it from many others as a symbol of the universality of law, and therefore of the Law Maker. The Forty-Seventh Problem of Euclid not only teaches us to be general lovers of the arts and sciences, but to bow heads in reverence at the perfection and the beauty, the universality and the infinite extension of the laws of the Great Law Giver.