Arithmetician

It is said that no amount of scholars can pinpoint what pushes magic to flow. Arithmeticians believe that it can be broken down to simple mathematical equations. With them, they are able to manipulate magic to the situation that it is needed. Only after years of study is it easy enough to break down and figure it out on the fly. Being this way makes a person very precise and articulate in everything they do. These calculating strategists employ the principles of arithmetic law to pinpoint targets for their attacks.

The arithmetician is an archetype of the scholar class.

Limit Breaks (Su): At 1st level, the arithmetician receives the Limit Breaks (Analytical Perfection and Defensive Arithmancy).

> *Analytical Perfection (Su):* This Limit Break allows the arithmetician to use her mathematical casting ability to perfection. She is able to ignore the caster level penalty and use any Situation/Number without including allies or herself in her casting for a duration of 1 round + 1 round per four scholar levels after 1st. This limit break requires only a swift action.

> *Defensive Arithmancy (Su):* This Limit Break allows the arithmetician to halve incoming damage and double incoming healing to herself. For a duration of 1 round + 1 round per four scholar levels after 1st, the arithmetician automatically halves any damage (whether it be physical or magical in nature) that is inflicted upon herself and automatically doubles any healing that is bestowed upon herself. This limit break requires only a swift action.

These abilities replace the scholar's standard Limit Breaks.

Cantrips: Arithmeticians learn a number of cantrips, or 0-level spells. These spells are cast like any other spell, but they do not consume MP and may be used again. Arithmeticians begin with 4 0-level spells chosen from any spellcaster's spell lists and gain two additional 0-level spells every four scholar levels after 1st level.

This ability modifies cantrips.

Grimoire (Su): Beginning of 1st level, books and tomes become deadly weapons in the hands of an arithmetician. Functioning only in the hands of an arithmetician, a book or tome read by an arithmetician deals 1d4 + Intelligence modifier points of non-elemental damage. This is a ranged touch attack that has a range of 25 feet + 5 feet per two scholar levels.

This ability modifies grimoire.

Mathematical Casting (Su): Mathematics is the fundament by which the arithmetician quantifies everything including magic. By accepting a -1 caster level penalty, the arithmetician can alter her spell with an Equation. This is a free action that does not provoke an attack of opportunity. MP cost remains the same.

The arithmetician gains one "Situation" at 1st level and every four levels thereafter to a maximum of 5. Situations are combat based scenarios that will make a creature vulnerable to the arithmetician's spell. A Situation can be anything that has a number that all beings in the combat have a chance of having. Some examples are [Initiative, Strength Score, Base Attack Bonus or even Number of Limbs]. No matter what the choice, it must be something that every person in combat would potentially have a number for.

Also at 1st level and every six levels thereafter, the arithmetician gains a new "Number". She must choose one of the following:

- Three
- Four
- Five
- Any Prime Number

These numbers will select the targets of the arithmetician's mathematically altered spell.

By selecting one Situation she knows and one Number she knows, the spell the arithmetician now casts affects everyone (ally, enemy or herself) that has that Situation at a number divisible by the number she has chosen. An arithmetician can take the Extra Scholar Exploit feat to gain an additional Situation or Number. The arithmetician does not need to meet the prerequisites for this feat.

Example: Haduk the Arithmetician wants to heal everyone in his party quickly. He selects "Hit Point Total" from his Situations Known and selects 4 as his Number. He then casts a healing spell. All his allies, who each have 12, 24, and 36 Hit Points remaining, are healed by the spell. Unfortunately for Haduk, the boss-level monster they had been fighting had 88 hit points left, and has also been healed. Had Haduk chosen 3 instead of 4, he would have healed all his allies, and none of the enemies.

This ability replaces arcane hypothesis.

Arithmancy (Su): An arithmetician can use her mathematical prowess to add metamagic effects to her spells without using spending extra MP. Starting at 1st level, the arithmetician selects two metamagic feats she does not yet have. When casting a spell, she can perform the steps below to spontaneously apply the effects of either or both of these metamagic feats, as well as any other metamagic feats she has, to the spell without spending extra MP. At 10th and 20th level, the arithmetician selects one additional metamagic feat, adding its effect to the list of possible effects she can apply to spells with this ability. An arithmetician can use this ability a number of times per day equal to her Intelligence modifier.

When casting a spell using arithmancy, the arithmetician first determines the effective spell level of the modified spell she is attempting to cast (calculated as normal for a spell modified by metamagic feats). She can apply any number of metamagic effects to a single spell, provided she is able to cast spells of the modified spell's effective spell level.

Refer to the Prime Constants table to determine the prime constants that can be used to cast a spell of the desired effective spell level. Then the arithmetician rolls a number of d6s equal to the number of ranks she possesses in Spellcraft. She can then perform some combination of addition, subtraction, multiplication, and division upon the numbers rolled that gives rise to one of the relevant prime constants. If she can produce one of the relevant prime constants, the spell takes effect with the declared metamagic effects, and she spends MP equal to the unaltered spell's level. If she is unsuccessful, she fails to cast the spell, the action used to cast the spell is lost, and the MP is spent. The DC of any Concentration check to cast a spell affected by this ability uses the effective spell level used to determine the prime constants, even though a successful casting of the spell does not expend additional MP.

Table: Prime Constants	
Effective Spell Level	**Prime Constants**
1st	3, 5, 7
2nd	11, 13, 17
3rd	19, 23, 29
4th	31, 37, 41
5th	43, 47, 53
6th	59, 61, 67
7th	71, 73, 79
8th	83, 89, 97
9th	101, 103, 107

This ability replaces light/dark arts, light arts: penury, dark arts: parsimony, light arts: accession, dark arts: manifestation, light arts: celerity, dark arts: alacrity, light arts: rapture, and dark arts: ebullience.

Arithmetic (Ex): At 2nd level, an arithmetician can solve any mathematical equations almost instantly. She gains the ability to solve any mathematical problem as a free action. In addition, her analytical mind quickly accesses situations, allowing her to act while others are still debating the appropriate courses of action. The arithmetician may add her Intelligence modifier in addition to her Dexterity modifier to her initiative rolls. This stacks with the Improved Initiative feat.

This ability replaces arcane reservoir.

Magical Theorem (Su): At 2nd level and every other level thereafter, the arithmetician learns how to apply one type of mathematics to her spells. Magical theorems are divided into five disciplines (Algebra, Geometry, Calculus, Topology, and Statistics). The first magical theorem in each discipline may be learned by any arithmetician, but subsequent theorems may only be learned once the preceding theorems in the discipline have been mastered.

Algebra

- *Subtraction:* The arithmetician simply subtracts energy from the sum total of what is required to alter her spells. When applying a metamagic feat to a spell she casts, she subtracts 1 MP the metamagic feat imposes upon the spell (which also reduces the spell level of the spell) to a minimum of 1.
- *Addition:* The arithmetician adds additional energy to her spells, rendering them more effective. She adds one to each dice of variable numbers in the spell's description.
- *Equation:* By mastering algebra, the arithmetician gains the ability to link two creatures together in an equation. As a standard action, she may designate two creatures, who each receive a Will save (DC 10 + half of the scholar's level + her Intelligence modifier). If both creatures fail their saving throw, they are linked together for one round per class level the arithmetician possesses. If one of the linked creatures takes damage, loses hit points, heals damage, or suffers a status effect, the other creature is affected as well, suffering the same effects, taking the same amount of damage, or healing the same amount of hit points. If one of the linked creatures dies, the remaining creature must immediately succeed at a

Fortitude save against this ability's DC or die. If one of the creatures is immune to a form of damage or a status effect, both creatures are immune.

Geometry

- *Euclidian Space:* The arithmetician gains a better understanding of distances and spacial relations. She adds 5 feet for every two levels of the scholar class she possesses to the range of each of her spells.
- *Riemann Manifolds:* The arithmetician's understanding of geometry is such that she is able to curve her spells around obstacles. When casting any spell requiring a ranged touch attack, the arithmetician can ignore any benefit the target gains from cover, and never risks harming an ally in melee or grappling with a target.
- *Lobachevskian Dimensions:* The arithmetician understands the curvature of the multi-verse and can warp it, allowing her to reach her target from safety. She may cast any of her "Touch" range spells as if they had a range of "Close," though doing so requires a ranged touch attack rather than a melee touch attack.

Calculus

- *Integrals:* The arithmetician can integrate her spells, making them more cohesive and difficult to break down. The DC to dispel an arithmetician's spells increases by +4.
- *Derivatives:* The arithmetician can differentiate her spells, allowing them to function in non-continuous units of time. After a spell is cast, the arithmetician can choose to differentiate her spell as a move action, causing the spell to become suspended. She may recall her spell as a move action, at which point it continues from the point at which it had been differentiated. The arithmetician may differentiate each spell only once.
- *Time Variance:* The arithmetician understands how time functions and can break down spells cast upon her. The arithmetician can halve or increase by half the duration of any spells cast upon her as an immediate action.

Topology

- *Manifolds:* The arithmetician can create complex figures by combining copies of similar figures. When determining the area of any shapeable spell, the arithmetician increases the area by one half (+50%).
- *Homeomorphism:* The arithmetician learns how to transform variables from one set to another set while still preserving the values of the original. She may alter any area-affecting spell she casts so that it affects an area different from its normal area, as selected from the following list: Cylinder (10-foot radius, 30 feet high), Cone (40 feet long), Cubes (four 10-foot cubes), or a sphere (20-foot radius spread). The spell works otherwise normally in all respects.
- *Knot Theory:* The arithmetician understands mathematical knots, allowing her to twist, tangle, and shape her area effect spells. The arithmetician can alter any of her area effect spells so that they exclude any square or squares within their area of effect, as determined by her.

Statistics

- *Above Average:* The arithmetician learns to skew the law of averages, and may take 11 on any action on which she would normally be able to take 10. In addition, she may choose to take 11 on caster level checks, including Concentration checks, dispel checks and checks made to overcome spell resistance.
- *Eschew Dice:* Whenever the arithmetician casts a spell with variable effects, she may choose to take the average on each dice instead of rolling (d3 = 2, d4 = 3, d6 = 4, d8 = 5, d10 = 6, d12 = 7).
- *Outliers:* The arithmetician learns that occasional values are created which exist beyond the accepted ranged of results, and manipulates such values to her benefit. For a number of times per day equal to the

arithmetician's Intelligence modifier, she gains a +20 on a single skill check or caster level check she makes.

This ability replaces scholar exploits.

Cup of Life (Su): At 5th level, the arithmetician can make sure that nothing in the equation goes to waste. Whenever an arithmetician casts a spell that heals damage, if it puts herself or an ally over their max, the remaining HP is given to the next closest ally, within 30 feet, that isn't at full HP. If they have extra HP, it keeps passing until there is nothing left.

This ability replaces consume spells.

Split (Su): At 9th level, an arithmetician sees incoming spells as numbers and with just a thought, can split the numbers in half and transfer them to other people, including the original caster. As an immediate action, the arithmetician can make a Spellcraft check (DC 15 + double the spell's level), if successful, can split any spell that deals healing or damage to any creature within half the range of the original spell (rounded down), including the original caster. Any spell that requires an attack roll that hits the arithmetician will automatically hit her intended target. Any saving throws required will be based on the caster who cast the spell. The arithmetician can use this ability a number of times per day equal to 3 + her Intelligence modifier.

This ability replaces eldritch surge, improved surge, and greater surge.

Calculating Mind (Ex): At 10th level, the arithmetician sees potential in the world around her that nobody else notices. Her numerological abilities are heightened by this uncommon aptitude. Anytime she uses the arithmancy, she can use d8s instead of d6s when rolling her dice pool. She can use any combination of d6s and d8s that she wishes, as long as the number of dice does not exceed the number of ranks she possesses in Spellcraft.

This ability replaces sublimation.

Mathematical Manipulations (Su): At 19th level, an arithmetician can reduce the radius of a spread or burst effect or shorten the length of a cone. All changes must occur in 5-foot increments, to a minimum of 5 feet. Alternatively, the arithmetician can change the area of effect of a cone spell to a line with a length equal to the spell's range. In addition, the arithmetician can bend the line of a spell that has a line area of effect up to 90 degrees at any single point along the line's length.

This ability replaces bottomless well.

Soul Bind (Su): At 20th level, the arithmetician begins to understand that even the human body can be broken down in equations and slightly altered. Whenever she takes physical damage, if it is a multiple of the 'Number' she knows, as an immediate action, she is healed for half (rounded down) of the damage while the attacker takes that much damage.

This ability replaces magical supremacy.