

Flatland: A Romance of Many Dimensions

Flatland: A Romance of Many Dimensions by Edwin A. Abbott is a satirical novella that imagines a two-dimensional world and uses its protagonist's discovery of a third dimension to explore themes of perception, social class, and the limitations of understanding.

SECTION 1 Of the Nature of Flatland

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PART 1

THIS WORLD

SECTION 1 Of the Nature of Flatland

I call our world Flatland, not because we call it so, but to make its nature clearer to you, my happy readers, who are privileged to live in Space.

Imagine a vast sheet of paper on which straight Lines, Triangles, Squares, Pentagons, Hexagons, and other figures, instead of remaining fixed in their places, move freely about, on or in the surface, but without the power of rising above or sinking below it, very much like shadows--only hard with luminous edges--and you will then have a pretty correct notion of my country and countrymen. Alas, a few years ago, I should have said "my universe:" but now my mind has been opened to higher views of things. In such a country, you will perceive at once that it is impossible that there should be anything of what you call a "solid" kind; but I dare say you will suppose that we could at least distinguish by sight the Triangles, Squares, and other figures, moving about as I have described them. On the contrary, we could see nothing of the kind, not at least so as to distinguish one figure from another. Nothing was visible, nor could be visible, to us, except Straight Lines; and the necessity of this I will speedily demonstrate.

Place a penny on the middle of one of your tables in Space; and leaning over it, look down upon it. It will appear a circle.

But now, drawing back to the edge of the table, gradually lower your eye (thus bringing yourself more and more into the condition of the inhabitants of Flatland), and you will find the penny becoming more and more oval to your view, and at last when you have placed your eye exactly on the edge of the table (so that you are, as it were, actually a Flatlander)

SECTION 2 Of the Climate and Houses in Flatland

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SECTION 2 Of the Climate and Houses in Flatland

As with you, so also with us, there are four points of the compass North, South, East, and West.

There being no sun nor other heavenly bodies, it is impossible for us to determine the North in the usual way; but we have a method of our own. By a Law of Nature with us, there is a constant attraction to the South; and, although in temperate climates this is very slight-- so that even a Woman in reasonable health can journey several furlongs northward without much difficulty-- yet the hampering effort of the southward attraction is quite sufficient to serve as a compass in most parts of our earth. Moreover, the rain (which falls at stated intervals) coming always from the North, is an additional assistance; and in the towns we have the guidance of the houses, which of course have their side-walls running for the most part North and South, so that the roofs may keep off the rain from the North. In the country, where there are no houses, the trunks of the trees serve as some sort of guide. Altogether, we have not so much difficulty as might be expected in determining our bearings.

Yet in our more temperate regions, in which the southward attraction is hardly felt, walking sometimes in a perfectly desolate plain where there have been no houses nor trees to guide me, I have been occasionally compelled to remain stationary for hours together, waiting till the rain came before continuing my journey. On the weak and aged, and especially on delicate Females, the force of attraction tells much more heavily than on the robust of the Male Sex, so that it is a point of breeding, if you meet a Lady on the street, always to give her the North side of the way--by no means an easy thing to do always at short notice when you are in rude health and in a climate where it is difficult to tell your North from your South.

Windows there are none in our houses: for the light comes to us alike

SECTION 3 Concerning the Inhabitants of Flatland

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Law decided that in all towns containing a population above ten thousand, the angle of a Pentagon was the smallest house-angle that could be allowed consistently with the public safety. The good sense of the community has seconded the efforts of the Legislature; and now, even in the country, the pentagonal construction has superseded every other. It is only now and then in some very remote and backward agricultural district that an antiquarian may still discover a square house.

SECTION 3 Concerning the Inhabitants of Flatland

The greatest length or breadth of a full grown inhabitant of Flatland may be estimated at about eleven of your inches. Twelve inches may be regarded as a maximum.

Our Women are Straight Lines.

Our Soldiers and Lowest Class of Workmen are Triangles with two equal sides, each about eleven inches long, and a base or third side so short (often not exceeding half an inch) that they form at their vertices a very sharp and formidable angle. Indeed when their bases are of the most degraded type (not more than the eighth part of an inch in size), they can hardly be distinguished from Straight lines or Women; so extremely pointed are their vertices. With us, as with you, these Triangles are distinguished from others by being called Isosceles; and by this name I shall refer to them in the following pages.

Our Middle Class consists of Equilateral or Equal-Sided Triangles.

Our Professional Men and Gentlemen are Squares (to which class I myself belong) and Five-Sided Figures or Pentagons.

Next above these come the Nobility, of whom there are several degrees, beginning at Six-Sided Figures, or Hexagons, and from thence rising in the number of their sides till they receive the honourable title of Polygonal, or many-Sided. Finally when the number of the sides becomes so numerous, and the sides themselves so small, that the figure cannot be

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distinguished from a circle, he is included in the Circular or Priestly order; and this is the highest class of all.

It is a Law of Nature with us that a male child shall have one more side than his father, so that each generation shall rise (as a rule) one step in the scale of development and nobility. Thus the son of a Square is a Pentagon; the son of a Pentagon, a Hexagon; and so on.

But this rule applies not always to the Tradesman, and still less often to the Soldiers, and to the Workmen; who indeed can hardly be said to deserve the name of human Figures, since they have not all their sides equal. With them therefore the Law of Nature does not hold; and the son of an Isosceles (i.e. a Triangle with two sides equal) remains Isosceles still. Nevertheless, all hope is not such out, even from the Isosceles, that his posterity may ultimately rise above his degraded condition. For, after a long series of military successes, or diligent and skillful labours, it is generally found that the more intelligent among the Artisan and Soldier classes manifest a slight increase of their third side or base, and a shrinkage of the two other sides. Intermarriages (arranged by the Priests) between the sons and daughters of these more intellectual members of the

lower classes generally result in an offspring approximating still more to the type of the Equal-Sided Triangle.

Rarely--in proportion to the vast numbers of Isosceles births-- is a genuine and certifiable Equal-Sided Triangle produced from Isosceles parents (footnote 1). Such a birth requires, as its antecedents, not only a series of carefully arranged intermarriages, but also a long-continued exercise of frugality and self-control on the part of the would-be ancestors of the coming Equilateral, and a patient, systematic, and continuous development of the Isosceles intellect through many generations.

The birth of a True Equilateral Triangle from Isosceles parents is the subject of rejoicing in our country for many furlongs round. After a strict examination conducted by the Sanitary and Social Board, the infant, if certified as Regular, is with solemn ceremonial admitted into the class of Equilaterals. He is then immediately taken from his proud yet sorrowing parents and adopted by some childless Equilateral, who is bound by oath

SECTION 4 Concerning the Women

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to admit them at once into the privileged classes; a much larger number, who are still below the standard, allured by the prospect of being ultimately ennobled, are induced to enter the State Hospitals, where they are kept in honourable confinement for life; one or two alone of the most obstinate, foolish, and hopelessly irregular are led to execution.

Then the wretched rabble of the Isosceles, planless and leaderless, are ether transfixed without resistance by the small body of their brethren whom the Chief Circle keeps in pay for emergencies of this kind; or else more often, by means of jealousies and suspicious skillfully fomented among them by the Circular party, they are stirred to mutual warfare, and perish by one another's angles. No less than one hundred and twenty rebellions are recorded in our annals, besides minor outbreaks numbered at two hundred and thirty-five; and they have all ended thus.

Footnote 1. "What need of a certificate?" a Spaceland critic may ask:

"Is not the procreation of a Square Son a certificate from Nature herself, proving the Equal-sidedness of the Father?" I reply that no Lady of any position will marry an uncertified Triangle. Square offspring has sometimes resulted from a slightly Irregular Triangle; but in almost every such case the Irregularity of the first generation is visited on the third; which either fails to attain the Pentagonal rank, or relapses to the Triangular.

SECTION 4 Concerning the Women

If our highly pointed Triangles of the Soldier class are formidable, it may be readily inferred that far more formidable are our Women. For, if a Soldier is a wedge, a Woman is a needle; being, so to speak, ALL point, at

least at the two extremities. Add to this the power of making herself practically invisible at will, and you will perceive that a Female, in Flatland, is a creature by no means to be trifled with.

But here, perhaps, some of my younger Readers may ask HOW a woman in Flatland can make herself invisible. This ought, I think, to be apparent without any explanation. However, a few words will make it

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clear to the most unreflecting.

Place a needle on the table. Then, with your eye on the level of the table, look at it side-ways, and you see the whole length of it; but look at it end-ways, and you see nothing but a point, it has become practically invisible. Just so is it with one of our Women. When her side is turned towards us, we see her as a straight line; when the end containing her eye or mouth--for with us these two organs are identical--is the part that meets our eye, then we see nothing but a highly lustrous point; but when the back is presented to our view, then--being only sub-lustrous, and, indeed, almost as dim as an inanimate object--her hinder extremity serves her as a kind of Invisible Cap.

The dangers to which we are exposed from our Women must now be manifest to the meanest capacity of Spaceland. If even the angle of a respectable Triangle in the middle class is not without its dangers; if to run against a Working Man involves a gash; if collision with an Officer of the military class necessitates a serious wound; if a mere touch from the vertex of a Private Soldier brings with it danger of death; --what can it be to run against a woman, except absolute and immediate destruction? And when a Woman is invisible, or visible only as a dim sub-lustrous point, how difficult must it be, even for the most cautious, always to avoid collision!

Many are the enactments made at different times in the different States of Flatland, in order to minimize this peril; and in the Southern and less temperate climates, where the force of gravitation is greater, and human beings more liable to casual and involuntary motions, the Laws concerning Women are naturally much more stringent. But a general view of the Code may be obtained from the following summary:--

1. Every house shall have one entrance on the Eastern side, for the use of Females only; by which all females shall enter "in a becoming and respectful manner" (footnote 1) and not by the Men's or Western door.
2. No Female shall walk in any public place without continually keeping up her Peace-cry, under penalty of death.
3. Any Female, duly certified to be suffering from St. Vitus's Dance,

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fits, chronic cold accompanied by violent sneezing, or any disease necessitating involuntary motions, shall be instantly destroyed.

In some of the States there is an additional Law forbidding Females, under penalty of death, from walking or standing in any public place without moving their backs constantly from right to left so as to indicate their presence to those behind them; other oblige a Woman, when travelling, to be followed by one of her sons, or servants, or by her

husband; others confine Women altogether in their houses except during the religious festivals. But it has been found by the wisest of our Circles or Statesmen that the multiplication of restrictions on Females tends not only to the debilitation and diminution of the race, but also to the increase of domestic murders to such an extent that a State loses more than it gains by a too prohibitive Code.

For whenever the temper of the Women is thus exasperated by confinement at home or hampering regulations abroad, they are apt to vent their spleen upon their husbands and children; and in the less temperate climates the whole male population of a village has been sometimes destroyed in one or two hours of a simultaneous female outbreak. Hence the Three Laws, mentioned above, suffice for the better regulated States, and may be accepted as a rough exemplification of our Female Code.

After all, our principal safeguard is found, not in Legislature, but in the interests of the Women themselves. For, although they can inflict instantaneous death by a retrograde movement, yet unless they can at once disengage their stinging extremity from the struggling body of their victim, their own frail bodies are liable to be shattered.

The power of Fashion is also on our side. I pointed out that in some less civilized States no female is suffered to stand in any public place without swaying her back from right to left. This practice has been universal among ladies of any pretensions to breeding in all well-governed States, as far back as the memory of Figures can reach. It is considered a disgrace to any state that legislation should have to enforce what ought to be, and is in every respectable female, a natural instinct. The rhythmical and, if I may so say, well-modulated undulation of the back in our ladies

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of Circular rank is envied and imitated by the wife of a common Equilateral, who can achieve nothing beyond a mere monotonous swing, like the ticking of a pendulum; and the regular tick of the Equilateral is no less admired and copied by the wife of the progressive and aspiring Isosceles, in the females of whose family no "back-motion" of any kind has become as yet a necessity of life. Hence, in every family of position and consideration, "back motion" is as prevalent as time itself; and the husbands and sons in these households enjoy immunity at least from invisible attacks.

Not that it must be for a moment supposed that our Women are destitute of affection. But unfortunately the passion of the moment predominates, in the Frail Sex, over every other consideration. This is, of course, a necessity arising from their unfortunate conformation. For as they have no pretensions to an angle, being inferior in this respect to the very lowest of the Isosceles, they are consequently wholly devoid of brainpower, and have neither reflection, judgment nor forethought, and hardly any memory. Hence, in their fits of fury, they remember no claims and recognize no distinctions. I have actually known a case where a Woman has exterminated her whole household, and half an hour afterwards, when her rage was over and the fragments swept away, has asked what has become of her husband and children.

Obviously then a Woman is not to be irritated as long as she is in a position where she can turn round. When you have them in their apartments--which are constructed with a view to denying them that

power--you can say and do what you like; for they are then wholly impotent for mischief, and will not remember a few minutes hence the incident for which they may be at this moment threatening you with death, nor the promises which you may have found it necessary to make in order to pacify their fury.

On the whole we got on pretty smoothly in our domestic relations, except in the lower strata of the Military Classes. There the want of tact and discretion on the part of the husbands produces at times indescribable disasters. Relying too much on the offensive weapons of their acute angles

SECTION 5 Of our Methods of Recognizing one another

In Flatland, women occupy a severely restricted position, with a societal structure that denies them improvement or hope for advancement. The saying "Once a Woman, always a Woman" reflects the immutable nature of their fate, as evolution seems to have worked against them. Women are not only restricted by their inferior angles but also lack the ability to improve their status, which makes their condition especially dire in Flatland. Despite this, they are free from the burden of recalling or anticipating the struggles of their existence, as they are devoid of memory or foresight.

Recognition between individuals in Flatland is a complicated process due to the shared appearance of all figures as straight lines. The primary methods of recognition are hearing, feeling, and, for the more educated classes, sight. Hearing is crucial in distinguishing voices, especially among the lower classes, where it is easier to identify different geometric classes, such as Equilateral Triangles, Squares, and Pentagons. However, this method becomes unreliable among the higher classes, where voices become indistinguishable. To compensate, touch is used for recognition, where individuals feel each other's angles to determine their identity. For the lower classes, this process is straightforward, as the shape of a triangle or square can be quickly identified through its angles.

Among the upper classes, however, recognition by touch is more difficult, especially when identifying higher-ranked polygons. The precise identification of an individual's class requires long practice, and even highly educated individuals struggle to distinguish between shapes with many sides, such as a ten-sided versus a twelve-sided polygon.

Moreover, recognition by touch requires care and caution, as a single misstep can lead to injury. A sudden movement during the process can cause fatal accidents, particularly with the more angular figures, like the Isosceles, whose sharp points pose risks. The author reflects on a personal family history, where one such accident set back his family's social ascent by several generations.

In conclusion, although the Flatlanders cannot see angles directly, they can infer them with great accuracy, using their developed sense of touch and a natural progression in angle sizes, which helps them distinguish classes with surprising precision.

SECTION 6 Of Recognition by Sight

In Flatland, recognition by sight is a complex and refined process, practiced mainly among the higher classes in more temperate regions. Although it is impossible to distinguish individuals by sight alone in many parts of Flatland, where all figures appear as straight lines, this ability becomes possible due to the presence of fog. In areas with significant fog, objects at a distance appear dimmer, allowing residents to distinguish shapes based on the varying levels of dimness. The practice of recognition by sight relies on this visual phenomenon, where figures at different distances appear with varying brightness and clarity.

For example, when encountering two individuals, a Merchant (Equilateral Triangle) and a Physician (Pentagon), one can recognize them by the varying degrees of dimness of their extremities. The Merchant's extremities will appear much dimmer than those of the Physician, as the Merchant's sides recede more rapidly into the fog. Through years of training and constant observation, educated Flatlanders can learn to identify individuals and distinguish between different ranks with considerable accuracy.

However, recognition by sight is not always straightforward. If a figure like the Father (a Triangle) presents his side instead of his angle, it can be difficult to determine his identity without further observation. Similarly, recognizing a Hexagonal figure requires more subtle interpretation, as the figure's sides will not all appear equally bright. The complexities of sight recognition increase when multiple figures are in motion, making it a skill that demands great expertise.

This art of sight recognition is taught in institutions like the University of Wentbridge, where the elite of society are trained. It is a difficult and time-consuming skill, accessible only to those with the resources to dedicate time and money to mastering it. Even the most advanced mathematicians find challenges in recognizing figures in motion within a crowded space, illustrating the intellectual demands of this practice.

SECTION 7 Concerning Irregular Figures

In Flatland, the education system plays a crucial role in determining one's future, with students progressing through university to pass the Final Test. The Polygonal class, having completed their education, rapidly outpaces the Triangular class in every field. The youth of the Polygonal class, initially showing early vivacity, eventually surpass their triangular peers in skill and knowledge, establishing dominance in various professions.

However, a small portion of the Polygonal class fails the Final Examination, and their fate is dismal. They are excluded from both higher and lower social ranks, unable to pursue careers or gain respectable marriages. These failures, lacking both formal education and innate talent, are typically left with few options, often leading them to a life of obscurity or failure. Historically, these individuals have been responsible for many of the uprisings and troubles in Flatland. In response to this issue, some progressive statesmen suggest drastic measures, including imprisonment or painless elimination for those who fail the test, to prevent further social unrest.

Shifting focus, the concept of Irregular Figures in Flatland is essential to understanding the structure of society. Every individual in Flatland is expected to have a regular geometric form. Women, for example, must be straight lines, while men of various professions must possess equal sides. The uniformity of angles is vital for societal order. If figures were irregular, it would be impossible to recognize them through sight or touch, leading to chaos in social interactions. Life would become so difficult that civilization might collapse into disorder.

In this society, irregularity is viewed as both a moral and social failing. An irregular figure is scorned, ostracized, and often destroyed, reflecting society's harsh treatment of those who deviate from the norm. Although some claim that moral irregularity is not tied to geometric irregularity, the prevailing belief in Flatland sees both as equally damaging, causing widespread social exclusion and despair.

SECTION 8 Of the Ancient Practice of Painting

In Flatland, life is portrayed as rather dull, particularly from an aesthetic and artistic perspective. While the society faces typical human issues such as battles, conspiracies, and political unrest, these problems seem less engaging when compared to the rigid, geometric structure of their world. In Flatland, everything is a

straight line, and visual experiences lack variety, restricted to brightness and obscurity. There are no landscapes or art forms as seen in Spaceland, making life, in an artistic sense, quite monotonous.

Historically, however, life was not always so lackluster. According to tradition, Colour—specifically the discovery and application of colour—once played a crucial role in brightening the lives of the inhabitants. This began when a Pentagon, whose name is debated, discovered the rudimentary process of painting and the components of simpler colours. Initially, he painted his house, slaves, family members, and eventually himself. This new form of decoration was both convenient and beautiful, and soon, Colour was adopted by society at large. The individual known as Chromatistes, as the most reliable sources agree, became an admired figure. His vibrant appearance made him stand out, and no one needed to feel or touch him to identify his front from his back. His presence was noticed instantly by others, and his movements were easy to predict, eliminating the confusion that often arises with the colourless beings like Squares and Pentagons. People respected him, and he garnered attention everywhere he went.

Chromatistes' colourful frame made him highly visible and respected, a sharp contrast to the dullness of his colourless peers. His innovation in decoration created a new social dynamic where appearance influenced how one was perceived, celebrated, and respected. The story of Colour's rise in Flatland reflects a moment of aesthetic flourishing that eventually faded, leaving behind a world where geometric uniformity reigns supreme once more.

SECTION 9 Of the Universal Colour Bill

At a small party, the company was a pleasure to behold. The richly varied hues of the assembly in a church or theatre were said to have once distracted our greatest teachers and actors; but most ravishing of all was said to have been the unspeakable magnificence of a military review. The sight of a battle line of twenty thousand Isosceles, suddenly facing about, exchanging the sombre black of their bases for the orange of their acute angles; the militia of Equilateral Triangles tricoloured in red, white, and blue; the mauve, ultramarine, gamboge, and burnt umber of the Square artillerymen rotating near their vermilion guns; the flashing of the five-coloured and six-coloured Pentagons and Hexagons careering across the field in their roles as surgeons, geometricians, and aides-de-camp—these may have been sufficient to make the famous story of a Circle, overcome by the artistic beauty of his forces, throw aside his marshal's baton and crown, and exclaim that he would exchange them for the artist's pencil. The grandeur of these days is reflected in the very language of the period. Even the commonest citizens seemed to speak with richer words and thoughts, a legacy still felt in our finest poetry and even in the rhythm of modern scientific discourse.

Meanwhile, the intellectual arts were decaying. The Art of Sight Recognition, no longer needed, fell out of practice, and subjects like Geometry, Statics, and Kinetics were soon neglected at our University. The inferior Art of Feeling met a similar fate at our Elementary Schools. The Isosceles classes, asserting that the Specimens were no longer needed, grew more numerous and insolent, using their immunity from old educational burdens to advance their cause.

Year after year, soldiers and artisans asserted their equality with the highest Polygons, claiming that with the new Colour Recognition, there was no distinction between them and the aristocracy. Not content with neglecting Sight Recognition, they demanded the legal prohibition of all "monopolizing and aristocratic Arts," calling for equal rights for all. They pushed for a Bill to force everyone, including Priests and Women, to be painted in certain colours. The idea was to ensure that, in certain positions, Women and Priests would appear identical, gaining respect and deference by their appearance.

This proposal was crafted not by an Isosceles but by an Irregular Circle, who, instead of being destroyed in childhood, brought havoc upon the country. The aim was to confuse the classes, making Priests and Women indistinguishable and undermining the authority of the Circles.

The Women, enticed by the promise of newfound respect, supported the Bill. The second goal of the Colour Bill was to demoralize the Circles, stripping them of their intellectual clarity and undermining their training in Sight Recognition. The proposal sought to diminish the intellectual strength of the Priestly Order and eventually dismantle the Aristocratic Legislature.

SECTION 11 Concerning our Priests

Flatland is known to only one living person—the Chief Circle, for the time being. Upon his deathbed, he passes the secret to none but his Successor. Only one manufactory produces it, and to prevent the secret from being betrayed, the workers are annually consumed, and fresh ones are introduced. The terror that our Aristocracy feels when they recall the far-distant days of the agitation for the Universal Colour Bill is immense.

It is high time I move from these brief and discursive notes about life in Flatland to the central event of this book—my initiation into the mysteries of Space. This is my subject; all that has come before is merely preface.

For this reason, I must omit many matters that, I believe, would not be without interest to my readers. For example, our method of propelling and stopping ourselves, despite not having feet; how we fix structures of wood, stone, or brick, although we have no hands and cannot lay foundations as you do, nor make use of the earth's lateral pressure; how the rain originates in the intervals between our zones, so the northern regions do not intercept moisture from the southern; the nature of our hills and mines, trees and vegetables, seasons and harvests; our Alphabet and method of writing, adapted to our linear tablets—these and a hundred other details of our existence I must leave out. I only mention them now to show that their omission is not due to forgetfulness, but out of respect for the reader's time.

Yet, before I move on to my legitimate subject, I should make a few final remarks about the pillars and mainstays of Flatland's Constitution. These are the controllers of our conduct and the shapers of our destiny: the objects of universal homage and almost adoration. Need I say that I mean our Circles or Priests?

When I call them Priests, let me not be misunderstood.

SECTION 12 Of the Doctrine of our Priests

This passage from Flatland presents a satirical critique of a rigid social structure, where the "Circles" enforce the belief that a being's configuration (the shape of their body) is central to their identity and behavior. The doctrine of Configuration implies that people's moral and social actions are determined by their geometric shape, rather than free will or effort. The Circles believe that deviations from perfect regularity—such as an Isosceles triangle with unequal sides—lead to undesirable behaviors and that "treatment" in the form of medical intervention can fix these "defects."

The passage also reflects upon the treatment of women in Flatland, where their roles are diminished to emotional, irrational beings, and they are excluded from intellectual education. This lack of education has a negative effect on the entire society, as it forces men to live in a "bi-lingual" manner, using one language with women and another with their peers. The piece highlights the contrast between public reverence for women and the private, dismissive attitudes toward them, emphasizing the deep gender inequality that exists in this world.

At its core, this section of Flatland critiques the absurdities of a society that focuses on surface-level characteristics, like geometry, to dictate social roles, moral judgments, and relationships. The mockery of this focus on "configuration" and the denigration of women serve to make pointed social commentary on the

dangers of rigid societal structures and the dehumanization that often accompanies them.

SECTION 13 How I had a Vision of Lineland

It was the last day but one of the 1999th year of our era, and the first day of the Long Vacation. Having amused myself till a late hour with my favourite recreation of Geometry, I had retired to rest with an unsolved problem in my mind. In the night I had a dream.

I saw before me a vast multitude of small Straight Lines (which I naturally assumed to be Women) interspersed with other Beings still

smaller and of the nature of lustrous points--all moving to and fro in one and the same Straight Line, and, as nearly as I could judge, with the same velocity.

A noise of confused, multitudinous chirping or twittering issued from them at intervals as long as they were moving; but sometimes they ceased from motion, and then all was silence. Approaching one of the largest of what I thought to be Women, I accosted her, but received no answer. A second and third appeal on my part were equally ineffectual. Losing patience at what appeared to me intolerable rudeness, I brought my mouth to a position full in front of her mouth so as to intercept her motion, and loudly repeated my question, "Woman, what signifies this concourse, and this strange and confused chirping, and this monotonous motion to and fro in one and the same Straight Line?" "I am no Woman," replied the small Line: "I am the Monarch of the world. But thou, whence intrudest thou into my realm of Lineland?"

Receiving this abrupt reply, I begged pardon if I had in any way startled or molested his Royal Highness; and describing myself as a stranger I besought the King to give me some account of his dominions. But I had the greatest possible difficulty in obtaining any information on points that really interested me; for the Monarch could not refrain from constantly assuming that whatever was familiar to him must also be known to me and that I was simulating ignorance in jest. However, by preserving questions I elicited the following facts: It seemed that this poor ignorant Monarch--as he called himself-- was persuaded that the Straight Line which he called his Kingdom, and in which he passed his existence, constituted the whole of the world, and indeed the whole of Space. Not being able either to move or to see, save in his Straight Line, he had no conception of anything out of it.

Though he had heard my voice when I first addressed him, the sounds had come to him in a manner so contrary to his experience that he had made no answer, "seeing no man," as he expressed it, "and hearing a voice as it were from my own intestines." Until the moment when I placed my mouth in his World, he had neither seen me, nor heard anything except confused sounds beating against, what I called his side, but what he called his INSIDE or STOMACH; nor had he even now the least conception of the region from which I had come. Outside his World, or Line, all was a blank to him; nay, not even a blank, for a blank implies Space; say, rather, all was non-existent.

His subjects--of whom the small Lines were men and the Points Women-- were all alike confined in motion and eyesight to that single Straight Line, which was their World. It need scarcely be added that the whole of their horizon was limited to a Point; nor could any one ever see anything but a Point. Man, woman, child, thing--each as a Point to the eye of a Linelander. Only by the sound of the voice could sex or age be distinguished. Moreover, as each individual occupied the whole of the narrow path, so to speak, which constituted his Universe, and no one could move to the right or left to make way for passers by, it followed that no Linelander could ever pass another. Once neighbours, always neighbours. Neighbourhood with them was like marriage with us. Neighbours remained neighbours till death did them part.

SECTION 14 How I vainly tried to explain the nature of Flatland

Thinking that it was time to bring down the Monarch from his raptures to the level of common sense, I determined to endeavour to open up to him some glimpses of the truth, that is to say of the nature of things in Flatland. So I began thus: "How does your Royal Highness distinguish the shapes and positions of his subjects? I for my part noticed by the sense of sight, before I entered your Kingdom, that some of your people are lines and others Points; and that some of the lines are larger --" "You speak of an impossibility," interrupted the King; "you must have seen a vision; for to detect the difference between a Line and a Point by the sense of sight is, as every one knows, in the nature of things, impossible; but it can be detected by the sense of hearing, and by the same means my shape can be exactly ascertained.

Behold me--I am a Line, the longest in Lineland, over six inches of Space --" "Of Length," I ventured to suggest. "Fool," said he, "Space is Length. Interrupt me again, and I have done." I apologized; but he continued scornfully, "Since you are impervious

SECTION 15 Concerning a Stranger from Spaceland

You are being provided with a book chapter by chapter. I will request you to read the book for me after each chapter. After reading the chapter, 1. shorten the chapter to no less than 300 words and no more than 400 words. 2. Do not change the name, address, or any important nouns in the chapter. 3. Do not translate the original language. 4. Keep the same style as the original chapter, keep it consistent throughout the chapter. Your reply must comply with all four requirements, or it's invalid. I will provide the chapter now.

It was the last day of our 1999th year of our era. The patterning of the rain had long ago announced nightfall; and I was sitting (footnote 3) in the company of my wife, musing on the events of the past and the prospects of the coming year, the coming century, the coming Millennium. My four Sons and two orphan Grandchildren had retired to their several apartments; and my wife alone remained with me to see the old Millennium out and the new one in.

I was rapt in thought, pondering in my mind some words that had casually issued from the mouth of my youngest Grandson, a most promising young Hexagon of unusual brilliancy and perfect angularity. His uncles and I had been giving him his usual practical lesson in Sight Recognition, turning ourselves upon our centres, now rapidly, now more slowly, and questioning him as to our positions; and his answers had been so satisfactory that I had been induced to reward him by giving him a few hints on Arithmetic, as applied to Geometry. Taking nine Squares, each an inch every way, I had put them together so as to make one large Square, with a side of three inches, and I had hence proved to my little Grandson that--though it was impossible for us.

SECTION 16 How the Stranger vainly endeavoured to reveal to me in words the mysteries of Spaceland

As soon as the sound of the Peace-cry of my departing Wife had died away, I began to approach the Stranger with the intention of taking a nearer view and of bidding him be seated: but his appearance struck me dumb and motionless with astonishment. Without the slightest symptoms of angularity he nevertheless varied every instant with gradations of size and brightness scarcely possible for any Figure within the scope of my experience. The thought flashed across me that I might have before me a burglar or cut-throat, some monstrous Irregular Isosceles, who, by feigning the voice of a Circle, had obtained admission somehow into

the house, and was now preparing to stab me with his acute angle.

In a sitting-room, the absence of Fog (and the season happened to be remarkably dry), made it difficult for me to trust to Sight Recognition, especially at the short distance at which I was standing. Desperate with fear, I rushed forward with an unceremonious, "You must permit me, Sir --" and felt him. My Wife was right. There was not the trace of an angle, not the slightest roughness or inequality: never in my life had I met with a more perfect Circle. He remained motionless while I walked around him, beginning from his eye and returning to it again. Circular he was throughout, a perfectly satisfactory Circle; there could not be a doubt of it.

Then followed a dialogue, which I will endeavour to set down as near as I can recollect it, omitting only some of my profuse apologies-- for I was covered with shame and humiliation that I, a Square, should have been guilty of the impertinence of feeling a Circle. It was commenced by the Stranger with some impatience at the lengthiness of my introductory process.

Stranger. Have you felt me enough by this time? Are you not introduced to me yet?

SECTION 17 How the Sphere, having in vain tried words, resorted to deeds

How the Sphere, having in vain tried words, resorted to deeds. It was in vain. I brought my hardest right angle into violent collision with the Stranger, pressing on him with a force sufficient to have destroyed any ordinary Circle: but I could feel him slowly and unarrestably slipping from my contact; not edging to the right nor to the left, but moving somehow out of the world, and vanishing into nothing.

Soon there was a blank. But still I heard the Intruder's voice.

Sphere. Why will you refuse to listen to reason? I had hoped to find in you--as being a man of sense and an accomplished mathematician-- a fit apostle for the Gospel of the Three Dimensions, which I am allowed to preach once only in a thousand years: but now I know not how to convince you. Stay, I have it. Deeds, and not words, shall proclaim the truth. Listen, my friend.

I have told you I can see from my position in Space the inside of all things that you consider closed. For example, I see in yonder cupboard near which you are standing, several of what you call boxes (but like everything else in Flatland, they have no tops or bottom) full of money; I see also two tablets of accounts. I am about to descend into that cupboard and to bring you one of those tablets. I saw you lock the cupboard half an hour ago, and I know you have the key in your possession. But I descend from Space; the doors, you see, remain unmoved. Now I am in the cupboard and am taking the tablet. Now I have it. Now I ascent with it.

I rushed to the closet and dashed the door open. One of the tablets was gone. With a mocking laugh, the Stranger appeared in the other corner of the room, and at the same time the tablet appeared upon the floor. I took it up. There could be no doubt--it was the missing tablet. I groaned with horror, doubting whether I was not out of my sense; but the Stranger continued: "Surely you must now see that my explanation, and no other, suits the phenomena. What you call Solid things are really

Flatland 67 superficial; what you call Space is really nothing but a great Plane. I am in Space, and look down upon the insides of the things of which you only see the outsides. You could leave the Plane yourself, if you could but summon up the necessary volition. A slight upward or downward motion would enable you to see all that I can see.

"The higher I mount, and the further I go from your Plane, the more I can see, though of course I see it on a smaller scale. For example, I am ascending; now I can see your neighbour the Hexagon and his family in their several apartments; now I see the inside of the Theatre, ten doors off, from which the audience is only just departing; and on the other side a Circle in his study, sitting at his books. Now I shall come back to you. And, as a crowning proof, what do you say to my giving you a touch, just the least touch, in your stomach? It will not seriously injure you, and the slight pain you may suffer cannot be compared with the mental benefit you will receive."

Before I could utter a word of remonstrance, I felt a shooting pain in my inside, and a demoniacal laugh seemed to issue from within me. A moment afterwards the sharp agony had ceased, leaving nothing but a dull ache behind, and the Stranger began to reappear, saying, as he gradually increased in size, "There, I have not hurt you much, have I? If you are not convinced now, I don't know what will convince you. What say you?"

My resolution was taken. It seemed intolerable that I should endure existence subject to the arbitrary visitations of a Magician who could thus play tricks with one's very stomach. If only I could in any way manage to pin him against the wall till help came! Once more I dashed my hardest angle against him, at the same time alarming the whole household by my cries for aid. I believe, at the moment of my onset, the Stranger had sunk below our Plane, and really found difficulty in rising. In any case he remained motionless, while I, hearing, as I thought, the sound of some help approaching, pressed against him with redoubled vigor, and continued to shout for assistance.

A convulsive shudder ran through the Sphere. "This must not be," I thought I heard him say: "either he must listen to reason, or I must have

SECTION 18 How I Came to Spaceland, and what I Saw There

The 18th section of "Flatland" narrates the protagonist's extraordinary journey from the two-dimensional world of Flatland to the incomprehensible realms of Spaceland, under the guidance of a Sphere from this strange world. Overwhelmed initially by a sensation that defies his understanding, the narrator encounters a reality far beyond his comprehension: the existence of a third dimension. Guided by the Sphere, he quickly transitions from terror to awe as he is introduced to the concept of three dimensions, a revelation that ignites a profound curiosity and adoration towards his guide.

The Sphere, embodying wisdom and a kind of beauty unknown to Flatland, attempts to explain its three-dimensional form to the narrator, a concept that he finds particularly challenging to grasp. The Sphere's explanations of multidimensionality and the inadequacy of the protagonist's sensory experiences to fully comprehend Spaceland's essence underscore the limitations imposed by one's perspective on understanding higher realities or dimensions.

Further, the Sphere leads the narrator in an exploration back to Flatland, allowing him to perceive his world from an elevated, three-dimensional viewpoint. This experience not only enhances the narrator's understanding of his own world but also reveals the mundane reality of his domestic life from a god-like omnipotent perspective.

A pivotal moment occurs when the Sphere and the protagonist discuss the essence of omniscience and divine qualities, challenging the protagonist's preconceived notions of divinity, wisdom, and affection. The Sphere dismisses the glorification of omniscience without moral goodness, proposing that understanding and wisdom should serve to foster affection and compassion, rather than mere intellectual superiority.

The chapter concludes with an alarming interaction with the Council of Flatland, which is convened to suppress any ideas or individuals deviating from their conventional beliefs and norms. The Sphere attempts

to enlighten the Council about the existence of three dimensions but faces rejection and threat. This encounter highlights the rigid intellectual and societal structures that resist change or challenge, even in the face of undeniable evidence or superior knowledge.

In essence, "How I came to Spaceland, and what I saw there" is a profound exploration of perception, enlightenment, and the resistance faced by revolutionary ideas in a conformist society. The protagonist's journey from ignorance to awareness reflects a universal theme of the quest for knowledge and the challenges of transcending one's limitations to embrace broader truths.

SECTION 19 How, though the Sphere shewed me other mysteries of Spaceland, I still desire more; and what came of it

In this segment of "Flatland," the Sphere introduces the narrator, a Square, to the concept of three-dimensional objects by illustrating how a solid figure, such as a cube, is formed through the stacking of squares, challenging the Square's perception limited by his two-dimensional experience. Despite the Sphere's efforts, the Square initially perceives the cube merely as a plane figure with irregular boundaries, highlighting the difficulty of comprehending dimensions beyond one's own perceptual limitations.

The Sphere educates the Square on the principles of light, shade, and perspective to elucidate the difference between plane figures and solids, thereby expanding the Square's understanding to acknowledge the three-dimensional form. This revelation leaves the Square profoundly enlightened and desirous of more knowledge, pushing him to ponder the existence of dimensions beyond the third, which leads to a philosophical and scientific dialogue between him and the Sphere.

The Square, now thirsting for deeper understanding, requests to witness the "interior" of the Sphere, symbolizing a quest for knowledge that transcends the visible and tangible. He speculates about the existence of a fourth dimension, drawing parallels from his newly acquired understanding of dimensions and applying it progressively to conceive of a world beyond his sensory comprehension.

Despite the Sphere's initial dismissal and assertion that no such land exists, the Square perseveres, presenting logical arguments and analogies to support the concept of a fourth dimension influenced by the geometric progression and the perceptible increase in complexity and dimensionality with each ascent through the dimensions.

The Square's inquiries indirectly touch upon the notion of beings from higher dimensions revealing themselves in lower dimensions without fully integrating into the lower-dimensional plane, hinting at the possibility of dimensions even higher than the fourth. This leads to a speculative discussion on the nature of existence and perception, where physical dimensions may serve as metaphors for intellectual and spiritual insights.

The conversation transitions into a contemplation of the nature and origins of such trans-dimensional visitations, with the Sphere acknowledging such phenomena albeit with skepticism towards their interpretation, suggesting that such visions might be products of the mind rather than manifestations of higher-dimensional realities.

Ultimately, the dialogue encapsulates a profound inquiry into the limits of human understanding and the perennial pursuit of knowledge beyond the immediate sensory and cognitive grasp, emblematic of humanity's unyielding quest for deeper understanding of the cosmos and our place within it. This chapter reflects a pivotal moment of epiphany and aspiration, where the intersection of geometry, philosophy, and metaphysics invites readers to ponder the endless possibilities of existence and the universe.

SECTION 20 How the Sphere Encouraged Me in a Vision.

In this chapter of "Flatland," the narrator finds himself grappling with how to share his extraordinary experiences in other dimensions without alarming his wife. Unwilling to expose her to the unbelievable truths, he fabricates a story about accidentally falling through a trapdoor, relying on her sensible nature not to probe too deeply. His own mind, however, remains deeply unsettled by these encounters, leading him to seek solitude to process everything. While attempting to mentally construct the Third Dimension, he falls into a deep sleep, which transitions into a profound dream guided by the Sphere.

In the dream, the Sphere introduces him to the concept of Pointland, a dimensionless existence occupied by a single self-absorbed entity. This Point lives in complete isolation, unable to conceive of anything beyond its own being, devoid of any understanding of plurality or the dimensions familiar to the narrator. The Sphere uses this example to illustrate the pitfalls of complacency and the virtue of aspiration, contrasting the Point's ignorant bliss with the possibility of growth. As they observe the Point proclaiming its self-contained satisfaction, the narrator questions its understanding of existence, prompting the Sphere to explain how such limited beings perceive themselves as the entirety of their universe.

This vision culminates in a reflection on the nature of self-awareness and the importance of striving beyond one's limitations. The Sphere's teachings underscore a critique of narrow-minded satisfaction and the inherent value in seeking knowledge and understanding beyond one's immediate perception. The chapter not only advances the narrative but also deepens the philosophical underpinnings of the book, challenging the reader to consider the bounds of their perspective and the potential for transcendent understanding.

SECTION 21 How I tried to teach the Theory of Three Dimensions to my Grandson, and with what success

Grandson, whose casual remarks on the meaning of 3, 4, and even 5 dimensions had met with the approval of the Sphere? This idea was, at first, with enthusiasm; but I soon discovered that, while the theory was comprehensible enough, its application baffled me. Every attempt to demonstrate the concept of upward, not Northward, by analogies from the world of sight, totally failed; for in the realm of Flatland, the very idea of "upward" as opposed to "Northward" or any other "ward" was incomprehensible.

Despite my confusions, I attempted to share my revelations with my Grandson, hoping his fresh perspective and previous curious comments on dimensions might ease the teaching process. As my plans unfolded, the moment came to put my theory to the test. Calling upon my Grandson, I endeavored to enlighten him about the three dimensions, employing various means of practical demonstration to elucidate the theory of "Upward, not Northward." My efforts, initially met with interest, soon turned to dismay as he struggled to grasp the abstract concept utterly foreign to his two-dimensional perception.

The more I persisted in my explanations, invoking geometrical figures and the example of the Sphere's visitation to enhance my arguments, the more bewildered he became. His inability to perceive or even to imagine the upward dimension I so ardently described, made our conversations increasingly frustrating for both. Towards the end of our discussions, my Grandson's temper flared, and he reproached me for what he deemed nonsense, claiming it impossible to believe in the existence of anything beyond the familiar two dimensions of Flatland.

Resolute yet disheartened by this initial setback, I contemplated the monumental challenge that lay ahead in my mission to educate Flatland about the third dimension. Recognizing the herculean task of altering the

ingrained perceptions of an entire society, I pondered over the methods I could employ, considering the resistance and skepticism I encountered from my own Grandson.

SECTION 22 How I then tried to diffuse the Theory of Three Dimensions by other means, and of the result

In this chapter of "Flatland," the narrator recounts his failed attempts to enlighten others about the mysteries of the Third Dimension, starting with his Grandson, who mocks the idea. Feeling isolated in his understanding, the narrator decides to write a treatise on the Three Dimensions, using allegory and abstract concepts to evade the law against discussing anything outside of two dimensions. Despite his efforts, his ideas are met with skepticism, and his personal life suffers as he becomes obsessed with his revelations, leading to his reputation as a heretic.

The narrator's situation worsens when, during a meeting of the local Speculative Society, he impulsively shares his experiences of the Third Dimension, leading to his arrest and trial. He is eventually sentenced to perpetual imprisonment for his beliefs, a fate he accepts with the hope that his writings may inspire future generations to recognize the limitations of their own dimensional perceptions.

As years pass in prison, the narrator's only visitor is his brother, who, despite witnessing the narrator's demonstrations of the Third Dimension, remains unconvinced. The narrator laments his inability to convert anyone to his understanding of spatial dimensions, drawing parallels between his plight and that of Prometheus, punished for bringing knowledge to humanity. He holds onto hope that his memoirs might reach and resonate with beings capable of understanding multidimensional spaces, yet also struggles with doubt and the fear that his perceptions and experiences might be mere illusions.

The chapter closes with a revised preface to the second edition, where the editor reflects on the narrator's mental decline over seven years of imprisonment. The editor addresses criticism that the narrator is anti-feminist and anti-lower class, clarifying that the narrator's views have evolved and that he now appreciates the qualities and potential of lower-dimensional beings. The preface underscores the theme of perception versus reality and the limitations of human understanding, suggesting a plea for open-mindedness and reform in both Flatland and beyond. The narrator emerges not only as a champion of higher-dimensional awareness but also as a critic of societal and dimensional prejudices, advocating for a more inclusive and enlightened perspective.