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Basically, the procedure is carried out like long division of real numbers. One key point about division, and this works for real numbers as well as for polynomial division, needs to be pointed out. When you divide the dividend by the divisor, you get a quotient and a remainder. To check the problem, you multiply the divisor by the quotient and add the remainder to get the dividend. If the remainder is 0, then we say that the divisor divides evenly into the dividend. We have just factored the function $f(x)$ into two factors, $d(x)$ and $q(x)$.

Remainder Theorem When a polynomial function f is divided by $x-k$, the remainder r is $f(k)$. Okay, now in English. Now, tie that into what we just said above. If the remainder is zero, then you have successfully factored the polynomial. Plus, you now have a factored polynomial the quotient which is one less degree than the original polynomial. If the quotient is down to a quadratic or linear factor, then you can solve and find the other solutions.

Synthetic Division To divide a polynomial synthetically by $x-k$, perform the following steps.

Setup Write k down, leave some space after it. On the same line, write the coefficients of the polynomial function. Make sure you write the coefficients in order of decreasing power. Be sure to put a zero down if a power is missing. Place holders are very important For now, leave a blank line. Draw the left and bottom portions of a box. The left portion goes between the k and the coefficients. The bottom portion goes under the blank line you left.

Synthetic Division Once you have things set up, you can actually start to perform the synthetic division. Bring the first coefficient down to the bottom row below the line Multiply the number in the bottom row by the constant k , and write the product in the next column of the second row above the line. Add the numbers in the next column and write the total below the line. Repeat steps 2 and 3 until all the columns are filled. Interpreting the Results The very last value is the remainder. If the remainder is zero, you have found a zero of the function. The rest of the values are the coefficients of the quotient. Each term will be raised to the one less power than the original dividend. If it was a fourth degree polynomial to start with, the quotient will be a third degree polynomial.

Warnings You can only use synthetic division as described above to divide by $x-k$. That is, it must be a linear factor, and the leading coefficient must be a one.

Complex Roots Complex solutions come in pairs. **Square Roots** Solutions involving square roots also come in pairs. The same is not necessarily true of other roots. The maximum number of positive real roots can be found by counting the number of sign changes in $f(x)$. The actual number of positive real roots may be the maximum, or the maximum decreased by a multiple of two. The maximum number of negative real roots can be found by counting the number of sign changes in $f(-x)$. The actual number of negative real roots may be the maximum, or the maximum decreased by a multiple of two. Complex roots always come in pairs. Here are the Possible Combinations of Roots Total.

Chapter 2 : Since it is real, it is possible | Latin D

So the possible number of real roots, you could have 7 real roots, 5 real roots, 3 real roots or 1 real root for this 7th degree polynomial. Quadratics & the Fundamental Theorem of Algebra Site Navigation.

Truth and Fact World views and theories Further information: World view A common colloquial usage would have reality mean "perceptions, beliefs, and attitudes toward reality", as in "My reality is not your reality. For example, in a religious discussion between friends, one might say attempting humor , "You might disagree, but in my reality, everyone goes to heaven. Reality is the totality of all things, structures actual and conceptual , events past and present and phenomena, whether observable or not. It is what a world view whether it be based on individual or shared human experience ultimately attempts to describe or map. Certain ideas from physics, philosophy, sociology, literary criticism , and other fields shape various theories of reality. One such belief is that there simply and literally is no reality beyond the perceptions or beliefs we each have about reality. Many of the concepts of science and philosophy are often defined culturally and socially. Berger and Thomas Luckmann , was published in It explained how knowledge is acquired and used for the comprehension of reality. Out of all the realities, the reality of everyday life is the most important one since our consciousness requires us to be completely aware and attentive to the experience of everyday life. Western philosophy Philosophy addresses two different aspects of the topic of reality: On the one hand, ontology is the study of being, and the central topic of the field is couched, variously, in terms of being, existence, "what is", and reality. The task in ontology is to describe the most general categories of reality and how they are interrelated. If a philosopher wanted to proffer a positive definition of the concept "reality", it would be done under this heading. As explained above, some philosophers draw a distinction between reality and existence. In fact, many analytic philosophers today tend to avoid the term "real" and "reality" in discussing ontological issues. But for those who would treat "is real" the same way they treat "exists", one of the leading questions of analytic philosophy has been whether existence or reality is a property of objects. It has been widely held by analytic philosophers that it is not a property at all, though this view has lost some ground in recent decades. On the other hand, particularly in discussions of objectivity that have feet in both metaphysics and epistemology , philosophical discussions of "reality" often concern the ways in which reality is, or is not, in some way dependent upon or, to use fashionable jargon , "constructed" out of mental and cultural factors such as perceptions, beliefs, and other mental states, as well as cultural artifacts, such as religions and political movements , on up to the vague notion of a common cultural world view , or Weltanschauung. The view that there is a reality independent of any beliefs, perceptions, etc. More specifically, philosophers are given to speaking about "realism about" this and that, such as realism about universals or realism about the external world. Generally, where one can identify any class of object, the existence or essential characteristics of which is said not to depend on perceptions, beliefs, language, or any other human artifact, one can speak of "realism about" that object. One can also speak of anti-realism about the same objects. Anti-realism is the latest in a long series of terms for views opposed to realism. Perhaps the first was idealism , so called because reality was said to be in the mind, or a product of our ideas. Berkeleyan idealism is the view, propounded by the Irish empiricist George Berkeley , that the objects of perception are actually ideas in the mind. Phenomenalism differs from Berkeleyan idealism primarily in that Berkeley believed that minds, or souls, are not merely ideas nor made up of ideas, whereas varieties of phenomenalism, such as that advocated by Russell , tended to go farther to say that the mind itself is merely a collection of perceptions, memories, etc. Finally, anti-realism became a fashionable term for any view which held that the existence of some object depends upon the mind or cultural artifacts. The view that the so-called external world is really merely a social, or cultural, artifact, called social constructionism , is one variety of anti-realism. Cultural relativism is the view that social issues such as morality are not absolute, but at least partially cultural artifact. A correspondence theory of knowledge about what exists claims that "true" knowledge of reality represents accurate correspondence of statements about and images of reality with the actual reality that the statements or images are attempting to represent. For example, the scientific method can verify that a statement is true based on the observable evidence that a

thing exists. Many humans can point to the Rocky Mountains and say that this mountain range exists, and continues to exist even if no one is observing it or making statements about it. Being The nature of being is a perennial topic in metaphysics. For, instance Parmenides taught that reality was a single unchanging Being, whereas Heraclitus wrote that all things flow. The 20th century philosopher Heidegger thought previous philosophers have lost sight the question of Being qua Being in favour of the questions of beings existing things , so that a return to the Parmenidean approach was needed. An ontological catalogue is an attempt to list the fundamental constituents of reality. The question of whether or not existence is a predicate has been discussed since the Early Modern period, not least in relation to the ontological argument for the existence of God. Existence, that something is, has been contrasted with essence , the question of what something is. Since existence without essence seems blank, it associated with nothingness by philosophers such as Hegel. Nihilism represents an extremely negative view of being, the absolute a positive one. Timothy Leary coined the influential term Reality Tunnel , by which he means a kind of representative realism. The theory states that, with a subconscious set of mental filters formed from their beliefs and experiences, every individual interprets the same world differently, hence "Truth is in the eye of the beholder". His ideas influenced the work of his friend Robert Anton Wilson. Abstract objects and mathematics The status of abstract entities, particularly numbers, is a topic of discussion in mathematics. In the philosophy of mathematics , the best known form of realism about numbers is Platonic realism , which grants them abstract, immaterial existence. Other forms of realism identify mathematics with the concrete physical universe. Anti-realist stances include formalism and fictionalism. Some approaches are selectively realistic about some mathematical objects but not others. Finitism rejects infinite quantities. Ultra-finitism accepts finite quantities up to a certain amount. Constructivism and intuitionism are realistic about objects that can be explicitly constructed, but reject the use of the principle of the excluded middle to prove existence by reductio ad absurdum. The traditional debate has focused on whether an abstract immaterial, intelligible realm of numbers has existed in addition to the physical sensible, concrete world. A recent development is the mathematical universe hypothesis , the theory that only a mathematical world exists, with the finite, physical world being an illusion within it. An extreme form of realism about mathematics is the mathematical multiverse hypothesis advanced by Max Tegmark. All structures that exist mathematically also exist physically. The theory can be considered a form of Platonism in that it posits the existence of mathematical entities, but can also be considered a mathematical monism in that it denies that anything exists except mathematical objects. Problem of universals The problem of universals is an ancient problem in metaphysics about whether universals exist. For example, Scott, Pat, and Chris have in common the universal quality of being human or humanity. There are various forms of realism. Two major forms are Platonic realism and Aristotelian realism. Aristotelian realism, on the other hand, is the view that universals are real entities, but their existence is dependent on the particulars that exemplify them. Nominalism and conceptualism are the main forms of anti-realism about universals. Time and space Main article: Philosophy of space and time A traditional realist position in ontology is that time and space have existence apart from the human mind. Idealists deny or doubt the existence of objects independent of the mind. Some anti-realists whose ontological position is that objects outside the mind do exist, nevertheless doubt the independent existence of time and space. Kant , in the Critique of Pure Reason , described time as an a priori notion that, together with other a priori notions such as space , allows us to comprehend sense experience. Kant denies that either space or time are substance , entities in themselves, or learned by experience; he holds rather that both are elements of a systematic framework we use to structure our experience. Spatial measurements are used to quantify how far apart objects are, and temporal measurements are used to quantitatively compare the interval between or duration of events. Although space and time are held to be transcendently ideal in this sense, they are also empirically real, i. Idealist writers such as J. McTaggart in The Unreality of Time have argued that time is an illusion. As well as differing about the reality of time as a whole, metaphysical theories of time can differ in their ascriptions of reality to the past , present and future separately. Presentism holds that the past and future are unreal, and only an ever-changing present is real. The block universe theory, also known as Eternalism, holds that past, present and future are all real, but the passage of time is an illusion. It is often said to have a scientific basis in relativity. The growing block

universe theory holds that past and present are real, but the future is not. Time, and the related concepts of process and evolution are central to the system-building metaphysics of A. Whitehead and Charles Hartshorne. Modal realism is the view, notably propounded by David Kellogg Lewis, that all possible worlds are as real as the actual world. Other theorists may use the Possible World framework to express and explore problems without committing to it ontologically. Possible world theory is related to alethic logic: The many worlds interpretation of quantum mechanics is a similar idea in science. Theories of everything TOE and philosophy

Main article: Theory of everything philosophy The philosophical implications of a physical TOE are frequently debated. For example, if philosophical physicalism is true, a physical TOE will coincide with a philosophical theory of everything. The "system building" style of metaphysics attempts to answer all the important questions in a coherent way, providing a complete picture of the world. Plato and Aristotle could be said to be early examples of comprehensive systems. In the early modern period 17th and 18th centuries, the system-building scope of philosophy is often linked to the rationalist method of philosophy, that is the technique of deducing the nature of the world by pure a priori reason. Other philosophers do not believe its techniques can aim so high. Some scientists think a more mathematical approach than philosophy is needed for a TOE, for instance Stephen Hawking wrote in *A Brief History of Time* that even if we had a TOE, it would necessarily be a set of equations. He wrote, "What is it that breathes fire into the equations and makes a universe for them to describe? While this form of reality might be common to others as well, it could at times also be so unique to oneself as to never be experienced or agreed upon by anyone else. Much of the kind of experience deemed spiritual occurs on this level of reality. Such reflection was to take place from a highly modified "first person" viewpoint, studying phenomena not as they appear to "my" consciousness, but to any consciousness whatsoever. Husserl believed that phenomenology could thus provide a firm basis for all human knowledge, including scientific knowledge, and could establish philosophy as a "rigorous science". The "Brain in a vat" hypothesis is cast in scientific terms.

The maximum number of negative real roots can be found by counting the number of sign changes in $f(-x)$. The actual number of negative real roots may be the maximum, or the maximum decreased by a multiple of two.

Click to play Tap to play The video will start in 8 Cancel Play now Get daily news updates directly to your inbox Subscribe Thank you for subscribing We have more newsletters Show me See our privacy notice Could not subscribe, try again later Invalid Email Surrounded by her loving family as she relaxed by the pool on a dream holiday, Maria Belon felt she must be the luckiest woman in the world. Seconds later, Maria and her terrified husband and three sons were swept away by a ferocious 30ft wall of water that devoured everything in its path. Maria was horrifically wounded as she was dragged under water by the devastating Indian Ocean tsunami of Boxing Day After being submerged for more than three minutes, she finally surfaced and clung on to a tree. She was petrified, alone and convinced she was dying " but in a miracle that has inspired new film The Impossible, the mum and her family survived. Moments before paradise was smashed to bits, Maria was on a lounge at the Orchid Resort Hotel in Thailand while her boys, Lucas, 10, Tomas, eight, and Simon, five, were playing nearby with their dad. The mum watched in horror as husband Quique Alvarez and their two youngest boys were submerged by the roaring mass of dark water that carried with it cars and the chalet the family had been staying in. The aftermath of the tsunami Image: I was looking around thinking maybe this is just in my mind. It felt like the Earth was coming apart but everything looked perfect. I thought it was a black wall coming to get us. He had just got out of the pool to fetch the ball we had bought them on Christmas Day. I thought it was the end for all of us. You could feel them trembling and breaking. Stunned tourists watch as the tsunami approaches Image: But through the agony and confusion she saw something that gladdened her heart. You forget about yourself completely. I swam across the current and grabbed him. We held on to a tree trunk. When I was up the tree, bleeding very heavily with very deep wounds, I could feel the dying process. Naomi Watts with Maria Belon Image: Getty Traumatized and fearing another huge wave, Maria and Lucas were found in the tree by a Thai man who ensured they got to hospital. He dragged me through the mud for a long time until he was sure I was in good hands. He got washed away but grabbed a tree and clung on for half an hour. The dad wept, sure the others were drowned. Then, amazingly, they heard little Simon yelling for help above the roar of rushing water. Still convinced his wife and Lucas were dead, Quique nevertheless teamed up with another grieving husband and decided to search. Quique had to make the heartbreaking decision to leave Simon and Tomas in the care of strangers on the roof of the hotel. Maria Belon and her family attend the premiere Image: Getty After hours traipsing through hospitals full of the wounded, the dying and the bereaved, Quique could hardly believe his eyes when he found his wife and Lucas. The tsunami killed , people across Thailand, Sri Lanka, Indonesia and 11 other countries. Eight years have passed since the tragedy but The Impossible is a reminder of how the terror wave affected so many. The film, the first movie dramatisation of the disaster, is tipped for Oscar success. Lucas, who is now 18 and studying medicine at University College London, is played by rising British actor Tom Holland, The stunning recreation of the moment the wave came crashing down on the luxury hotel in Khao Lak is horrific. It took a year to put together the minute sequence. During the course of filming Maria and Naomi, 44, became close. And as part of the filming process, the family returned to the hotel which has been rebuilt after being flattened by the wave. It was good to close the whole process. Post-traumatic stress is difficult to move on from. But you have to move on. Their incredible survival was turned into the film after the director, Juan Antonio Bayona, heard her on radio. But it is hard because the man lost his two babies. The tsunami was an incredible gift. My whole life is extra time. A sensory overload of emotion and spectacle, The Impossible is a disaster movie much, much better than the usual overblown fare pumped out by Hollywood. Of course, their holiday turns into a nightmare when the tsunami comes crashing into their resort on December 26, leaving them battered, bruised and scattered. As the relief effort gets underway, Maria and her eldest, Lucas an impressive Tom Holland , struggle to survive while attempting to discover the fate of Henry and the twins. Scenes capturing the pair in an overstretched, blood-marked hospital are profoundly moving, while a sequence where Henry phones home

will choke you up. You can accuse the film of having a thin storyline, and later episodes where the family keep missing one another despite being in the same spot are overdone, but it earns a whole lot of points for its realism and technical craft. The Impossible is now showing in cinemas nationwide. Cert 12A, Running time mins. Like us on Facebook.

Chapter 4 : 'Real Housewives of New York': Who Is Barbara Kavovit, the Possible New Cast Member?

News Possible effects of the REAL ID and the MCB ID MCB is closely following the March 26, roll out of the REAL ID in Massachusetts to inform consumers of possible effects on MCB ID policies and procedures.

This can help narrow down your possibilities when you do go on to find the zeros. Possible number of positive real zeros: The up arrow is showing where there is a sign change between successive terms, going left to right. This arrow shows a sign change from positive 2 to negative 7. There is only 1 sign change between successive terms, which means that is the highest possible number of positive real zeros. To find the other possible number of positive real zeros from these sign changes, you start with the number of changes, which in this case is 1, and then go down by even integers from that number until you get to 1 or 0. If we went down by even integers from 1, we would be in the negative numbers, which is not a feasible answer, since we are looking for the possible number of positive real zeros. Therefore, there is exactly 1 positive real zero. Possible number of negative real zeros: The up arrows are showing where there are sign changes between successive terms, going left to right. The first arrow on the left shows a sign change from negative 2 to positive 7. The 2nd arrow shows a sign change from positive 7 to negative 8. There are 2 sign changes between successive terms, which means that is the highest possible number of negative real zeros. To find the other possible number of negative real zeros from these sign changes, you start with the number of changes, which in this case is 2, and then go down by even integers from that number until you get to 1 or 0. List all of the possible zeros: The factors of the constant term -2 are. The factors of the leading coefficient 3 are. Writing the possible factors as we get: There are 3 sign changes between successive terms, which means that is the highest possible number of positive real zeros. To find the other possible number of positive real zeros from these sign changes, you start with the number of changes, which in this case is 3, and then go down by even integers from that number until you get to 1 or 0. Note how there are no sign changes between successive terms. This means there are no negative real zeros. Since we are counting the number of possible real zeros, 0 is the lowest number that we can have. This will help us narrow things down in the next step. Use synthetic division to test the possible zeros and find an actual zero: Recall that if you apply synthetic division and the remainder is 0, then c is a zero or root of the polynomial function. If you need a review on synthetic division, feel free to go to Tutorial Synthetic Division and the Remainder and Factor Theorems. Above, we found that there are NO negative rational zeros, so we do not have to bother with trying any negative numbers. I would suggest to start with smaller easier numbers and then go from there. At last, we found a number that has a remainder of 0. Use the actual zero to find all the zeros: Rewriting $f(x)$ as $(x - 2)$ quotient we get: We need to finish this problem by setting this equal to zero and solving it:

Chapter 5 : NPR Choice page

Yes, a real miracle is possible. until it's figured out and explained. Miracles are only happenings which seem impossible and are unexplained. People would call it a miracle when a person walks away from an accident unscathed but the vehicle is a total wreck.

Overview[edit] Deleuze used the term virtual to refer to an aspect of reality that is ideal, but nonetheless real. An example of this is the meaning, or sense, of a proposition that is not a material aspect of that proposition whether written or spoken but is nonetheless an attribute of that proposition. A dictionary definition written by Charles Sanders Peirce , referencing the philosophy of Duns Scotus , supports this understanding of the virtual as something that is "as if" it were real, and the everyday use of the term to indicate what is "virtually" so, but not so in fact. The window is nowhere in actuality, but is nonetheless real and can be interacted with. This example actually leads to the second aspect of the virtual that Deleuze insists upon: This virtual is a kind of potentiality that becomes fulfilled in the actual. It is still not material, but it is real. Deleuze argues that Henri Bergson developed "the notion of the virtual to its highest degree" and that he based his entire philosophy on it. At the same ontological level as "the possible" i. It is what is not real, but displays the full qualities of the realâ€”in a plainly actual i. The prototypical case is a reflection in a mirror: This definition allows one to understand that real effects may be issued from a virtual object, so that our perception of it and our whole relation to it, are fully real, even if it is not. This explains how virtual reality can be used to cure phobias. Brian Massumi shows the political implications of this. However, note that the writers above all use terms such as "possible", "potential" and "real" in different ways and relate the virtual to these other terms differently. Deleuze regards the opposite of the virtual as the actual. Rob Shields argues that the opposite of the virtual is the material for there are other actualities such as a probability e. Martin Luther argued in his writing *The Sacrament of the Body and Blood of Christ*â€”Against the Fanatics with other Protestants, most notably Zwingli, over the virtualism of the Christian Eucharist, in alignment with Catholic tradition, that the Eucharist was actually and not virtually the body and blood of Christ. For the potential X is of the nature of X, but is without actual efficiency. So Milton asks whether the angels have virtual or immediate touch. So, too, the sun was said to be virtualiter on earth, that is, in its efficiency. *Habitualement notitiam voco, quando obiectum sic est praesens intellectui [i. Voco virtualem, quando aliquid intelligitur in aliquo, ut pars intellecti primi, non autem ut primum intellectum sive ut totale terminans intellectionem; sicut cum intelligitur homo intelligitur animal in nomine, ut pars intellecti, non ut intellectum primum, sive totale terminans intellectionem. Hoc satis proprie vocatur intellectum virtualiter, quia est satis proximum intellecto in actu. Non enim posset esse actualius intellectum, nisi esset propria intellectione intellectum, quae esse ipsius primi, ut termini totalis.* *The Difference and Repetition of Deleuze.* London and New York:

Chapter 6 : Is a Real Lightsaber Possible? Science Offers a New Hope

Possible Real Housewives of San Antonio series moves on to next stage in production. 1 / Back to Gallery New photos show the could-be Real Housewives of San Antonio series is moving along.

Chapter 7 : The REAL ID Act: Are You Ready for a National ID | calendrierdelascience.com

The reality-virtuality continuum therefore encompasses all possible variations and compositions of real and virtual objects. It has been described as a concept in new media and computer science, but in fact it could be considered a matter of anthropology.

Chapter 8 : - Real Zeros of Polynomial Functions

Are real lightsabers possible? Don Lincoln (a particle physicist and member of the Higgs-boson research team) takes a

scientific look. Is a Real Lightsaber Possible?

Chapter 9 : Possible effects of the REAL ID and the MCB ID | calendrierdelascience.com

Redditors sharing home ownership knowledge, real estate market knowledge, mortgage/lending and property investment expertise. If your question is a real estate question, then the answer is almost certainly location specific.