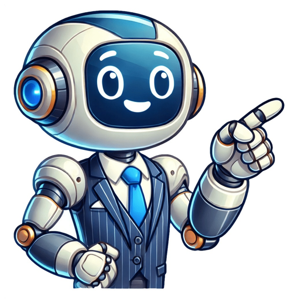

Tristearin, also known as glyceryl tristearate, is a type of triglyceride, which is a fat molecule made up of glycerol and three stearic acid molecules. It is commonly found in animal fats and some plant oils.Chemical StructureTristearin has the chemical formula $$C_{57}H_{110}O_{6}$$ C57H110O6. Its structure consists of a glycerol backbone connected to three stearic acid molecules. Each stearic acid molecule is a long-chain fatty acid with 18 carbon atoms, making tristearin a saturated fat.Glycerol BackboneGlycerol is a simple polyol compound with the formula $$C_{3}H_{8}O_{3}$$ C3H8O3. It serves as the backbone for triglycerides, where each hydroxyl group ($$-OH$$OH) of glycerol is esterified with a fatty acid.Stearic AcidStearic acid, with the formula $$C_{18}H_{36}O_{2}$$ C18H36O2, is a saturated fatty acid. Saturated fats have no double bonds between the carbon atoms in their fatty acid chains, which makes them solid at room temperature.Physical PropertiesTristearin is a solid at room temperature with a melting point of around 72C (162F). It is white and odorless, making it suitable for various industrial applications.Uses of TristearinFood IndustryIn the food industry, tristearin is used as a hardening agent in the production of margarine and other spreads. It helps improve the texture and stability of these products.Cosmetics and PharmaceuticalsTristearin is also used in cosmetics and pharmaceuticals. It acts as an emulsifier, helping to blend ingredients that would otherwise separate, and as a thickening agent in creams and lotions.Candle MakingIn candle making, tristearin is used to harden paraffin wax, making the candles burn longer and more evenly.Industrial LubricantsTristearin is used as a lubricant in various industrial processes, including metalworking and plastic manufacturing.Health ConsiderationsWhile tristearin is a saturated fat, it is important to consume it in moderation. Excessive intake of saturated fats can lead to health issues such as cardiovascular diseases. However, in small amounts, it is a part of a balanced diet.ConclusionTristearin is a versatile triglyceride with applications ranging from food production to industrial uses. Its chemical structure, consisting of a glycerol backbone and three stearic acid molecules, makes it a solid, saturated fat. Understanding its properties and uses can help us appreciate the role of fats in various industries and our daily lives. The multiplicative inverse is defined as the reciprocal of a given number. It is used to simplify mathematical expressions. The word 'inverse' implies something opposite/contrary in effect, order, position, or direction. A number when multiplied to its multiplicative inverse results in 1. What is Multiplicative Inverse? The multiplicative inverse of a number is defined as a number that when multiplied by the original number gives the product as 1. The multiplicative inverse of 'a' is denoted by a-1 or 1/a. In other words, when the product of two numbers is 1, they are said to be multiplicative inverses of each other. The multiplicative inverse of a number is defined as the division of 1 by that number. It is also called the reciprocal of the number. The multiplicative inverse property says that the product of a number and its reciprocal is 1.There are different types of numbers like natural numbers, fractions, unit fractions, negative numbers, etc. Let us understand the multiplicative inverse formula for each type of number.Natural numbers are counting numbers starting from 1. The multiplicative inverse of a natural number a is 1/a. For example, 3 is a natural number. If we multiply 3 by 1/3, the product is 1. Therefore, the multiplicative inverse of 3 is 1/3. Similarly, the multiplicative inverse of 110 is 1/110.Multiplicative Inverse of IntegersFinding the multiplicative inverse of positive integers is the same as natural numbers (explained above). Just like positive integers, the product of a negative number and its reciprocal must be equal to 1. Thus, the multiplicative inverse of any negative number is its reciprocal. For example, (-6) (-1/6) = 1, therefore, the multiplicative inverse of -6 is -1/6. Note that the multiplicative inverse of a negative number is always negative. And, in the multiplicative inverse of a negative integer, the negative sign will attach to the numerator, and not with the denominator.Multiplicative Inverse of a FractionThe multiplicative inverse of a fraction a/b is b/a because a/b b/a = 1 when (a,b 0). For example, the multiplicative inverse of 2/7 is 7/2. If we multiply 2/7 by 7/2, the product is 1 (2/7 7/2 = 1). In the multiplicative inverse of a fraction, the reciprocal is found by switching the numerator and denominator. Multiplicative inverse of 76/43 is 43/76. If we multiply 76/43 by 43/76, the product is 1 (76/43 43/76 = 1).A unit fraction is a fraction with a numerator 1. If we multiply a unit fraction 1/x by x, the product is 1. Thus, the multiplicative inverse of a unit fraction 1/x is x.Examples:The multiplicative inverse of the unit fraction 1/7 is 7. If we multiply 1/7 by 7, the product is 1 (1/7 7 = 1). The multiplicative inverse of the unit fraction 1/50 is 50. If we multiply 1/50 by 50, the product is 1 (1/50 50 = 1).Multiplicative Inverse of a Mixed FractionTo find the multiplicative inverse of a mixed fraction, convert the mixed fraction into an improper fraction, then determine its reciprocal. For example, let us find the multiplicative inverse of \(3\dfrac{1}{2}\).Step 1: Convert \(3\dfrac{1}{2}\) to an improper fraction, that is 7/2.Step 2: Find the reciprocal of 7/2, that is 2/7. Thus, the multiplicative inverse of \(3\dfrac{1}{2}\) is 2/7.It is interesting to note that the multiplicative inverse of a mixed number is always a proper fraction as an improper fraction is always greater than 1.Multiplicative Inverse of 0As per the definition of multiplicative inverse, it is the number that when multiplied to the original number results in 1 as the product. But with 0, we know that the product of 0 with any number is always 0. So, the multiplicative inverse of 0 does not exist.We can also understand this using the properties of division which states that the division of any number by 0 is not defined. It is not possible to find the multiplicative inverse of 0 as it would be 1/0 which is not defined.

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Inception1956 Summer Olympics medal tableMunicipalities in Prince Edward IslandArchiveMore featured listsThe Basilica of StPaul is a Catholic parish church in Rabat, Malta, located on the edge of the site of the Roman city of Melite. The present church was built between 1653 and 1658, replacing a church that was completed in 1578. It was constructed with funds from the noblewoman Cosmana Navarra, on plans prepared by Francesco Buonamici. The final stages were carried out completed by Lorenzo Gaf. It was elevated to the status of a minor basilica in 2020. The church features a grotto where, according to tradition, Paul the Apostle lived and preached during his three-month stay in Malta in AD60. This photograph shows the facade of the Basilica of StPaul in 2021.Photograph credit: Diego DelsoRecently featured: Clouded ApolloAnne of ClevesRosencrantz and GuildensternArchiveMore featured picturesCommunity portal The central hub for editors, with resources, links, tasks, and announcements.Village pump Forum for discussions about Wikipedia itself, including policies and technical issues.Site news Sources of news about Wikipedia and the broader Wikimedia movement.Teahouse Ask basic questions about using or editing Wikipedia.Help desk Ask questions about using or editing Wikipedia.Reference desk Ask research questions about encyclopedic topics.Content portals A unique way to navigate the encyclopedia.Wikipedia is written by volunteer editors and hosted by the Wikimedia Foundation, a non-profit organization that also hosts a range of other volunteer projects: CommonsFree media repository MediaWikiWiki software development Meta-WikiWikimedia project coordination WikibooksFree textbooks and manuals WikidataFree knowledge base WikinewsFree-content news WikiquoteCollection of quotations WikisourceFree-content library WikispeciesDirectory of species WikiversityFree learning tools WikivoyageFree travel guide WiktionaryDictionary and thesaurusThis Wikipedia is written in English. Many other Wikipedias are available; some of the largest are listed below. 1,000,000+ articles DeutschEspaolFranaisItalianoNederlandsPolskiPortugusSvenskaTing Vit 250,000+ articles Bahasa IndonesiaBahasa MelayuBn-lm-gCataletinaDanskEestiEsperantoEuskaraMagyarNorsk bokmlRomnSimple EnglishSloveninaSrpskiSrpskohrvatskiSuomiTrkeOzbekcha 50,000+ articles AsturianuAzrbaycancaBosanskiFryskGaeilgeGalegoHrvatskiKurdLatvieuLietuviNorsk nynorskShqipSlovenineRetrieved from " 2This article needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.Find sources:"1290"news newspapers books scholar JSTOR (August 2017) (Learn how and when to remove this message)Calendar yearYearsMillennium2ndmillenniumCenturies12thcentury13thcentury 14thcenturyDecades1270s1280s1290s 1300s1310sYears1287128812891290 129112921293vte1290 by topicLeadersPolitical entitiesState leadersReligious leadersBirth and death categoriesBirths DeathsEstablishments and disestablishments categoriesEstablishments DisestablishmentsArt and literature1290 in poetryvte1290 in various calendarsGregorian calendar1290MCCXCAb urbe condita2043Armenian calendar739 Assyrian calendar6040Balinese saka calendar12111212Bengali calendar696697Berber calendar2240English Regnal year18Edw.119Edw.1Buddhist calendar1834Burmese calendar652Byzantine calendar67986799Chinese calendar (EarthOx)3987 or 3780to (MetalTiger)3988 or 3781Coptic calendar10061007Discordian calendar2456Ethiopian calendar12821283Hebrew calendar50505051Hindu calendars- Vikram Samvat13461347- Shaka Samvat12111212- Kali Yuga43904391Holocene calendar11290Igbo calendar290291Iranian calendar668669Islamic calendar688689Japanese calendarSh 3()Javanese calendar12001201Julian calendar1290MCCXCKorean calendar3623Minguo calendar622 before ROC622Nanakshahi calendar178Thai solar calendar18321833Tibetan calendar(female Earth-Ox)1416 or 1035 or 263to(male Iron-Tiger)1417 or 1036 or 264 King Andrew III (r. 12901301)Year 1290 (MCCXC) was a common year starting on Sunday of the Julian calendar.July 10 King Ladislaus IV of Hungary ("the Cuman") is assassinated at the castle of Krsszeg (modern Romania). He is succeeded by Andrew III ("the Venetian"), after an election by Hungarian nobles, who is crowned by Archbishop Lodomer as new ruler of Hungary and Croatia in Szkesfehrvr on July 23.[1][2]December 18 King Magnus III of Sweden ("Birgersson") dies after a 15-year reign. He is succeeded by his 10-year-old son Birger ("Magnusson"). Although, Sweden is an elective monarchy, Birger had already been appointed heir to the throne in 1284.July 18 Edict of Expulsion: King Edward I of England ("Longshanks") orders all Jews (at this time probably numbering around 2,000) to leave the country by November 1 (All Saints' Day[3]). The edict was decreed on Tisha B'Av on the Hebrew calendar, a day that commemorates many calamities. They are eventually allowed back in 1656.September The 7-year-old Margaret, Maid of Norway, queen-designate and heir to the crown of Scotland, dies en route to the British Isles in Orkney, leading to thirteen competitors for the crown of Scotland, a succession crisis.November 28 Eleanor of Castile, wife of Edward I, dies while traveling in the North. She has been suffering from illness for some time, and the cold and dampness of the winter months probably aggravate her condition.December Edward I travels with the body of Queen Eleanor from Lincoln to London. Remembering his wife, Edward erects a series of crosses at each location that the body rests overnight. These are known as the twelve Eleanor crosses.Winter The second of the Statutes of Mortmain passed during the reign of Edward I prevents land from passing into the possession of the Church.Quia Emptores, a statute passed by Edward I, puts an end to the practice of subinfeudations. The statute allows land to be sold according to royal approval, as long as the new owner answers directly to his lord or the king.June Genoa concludes a new commercial treaty with the Mamluks; five galleys sent by King James II of Aragon ("the Just") join the Venetian Crusader fleet (some 20 ships) on its way to Acre. On board the fleet are Italian urban militias and mercenary forces under Seneschal Jean I de Grailly, who have fought for the Papal States in the so-called Italian Crusades.[4]August Italian Crusaders massacre Muslim merchants and peasants, and some local Christians in Acre. Some claim it began at a drunken party others that a European husband found his wife making love to a Muslim. The barons and local knights try to rescue a few Muslims and take them to the safety of the castle, while some ringleaders are arrested.[5]August 30 Survivors and relatives of the massacre at Acre take bloodstained clothing to Sultan Qalawun ("the Victorious") in Cairo, who demands that the leaders of the riot be handed over for trial, but the nobles refuse to send them and Qalawun now obtains legal clearance from the religious authorities in Cairo to break the truce with Crusader states.[6]October Qalawun orders a general mobilization of the Mamluk forces. In a council, it is decided that a peace delegation be sent to Cairo under Guillaume de Beaujeu, Grand Master of the Knights Templar. However, Qalawun demands huge compensation for those killed in Acre, and sends a Syrian army to the coast of Palestine, near Caesarea.[7]November 10 Qalawun ("the Victorious") dies as the Egyptian Mamluk army sets out for Acre. He is succeeded by his eldest son Al-Ashraf Khalil as ruler of the Mamluk Sultanate. Khalil orders his allies and tributaries in Syria to prepare for a campaign next spring. Governors and castle commanders are ordered to assemble siege equipment and armor.[8]June 13 Shamsuddin Kayumars, Mamluk ruler of the Delhi Sultanate, is murdered and succeeded by Jalal-ud-din Khalji (or Firuz Shah I), founder of the Khalji dynasty, ending Mamluk rule and instigating the Khalji Revolution.[9]September 27 The 6.8 Ms Zhili earthquake affects the province of Zhili in China, with a maximum Mercalli intensity of IX (Violent), killing 7,270100,000 people.June 8 Beatrice Portinari, muse of the Italian poet Dante Alighieri, dies in Florence. In his Divine Comedy (La Divina Commedia), he transforms his memory of Beatrice into an allegory of divine love.[10]"Year without winter" An exceptionally rare instance of uninterrupted transition, from autumn to the following spring, in England and the mainland of Western Europe.[11]March 1 The University of Coimbra is founded in Lisbon by Denis I ("the Poet King"). He decrees that Portuguese is the official language of Portugal, replacing classical Latin in that capacity.The Dnyaneshwari is written in India. This holy book is a commentary on the Bhagvad Gita and is narrated by Dnyaneshwar.January 3 Constance of Portugal, queen consort of Castile (d. 1313)January 6 Otto Bodrugan, English landowner and politician (d. 1331)June 23 Jakushitsu Genk, Japanese Rinzai master and poet (d. 1367)August 4 Leopold I, Duke of Austria ("the Glorious"), German nobleman (d. 1326)October 15 Anne of Bohemia, queen consort of Bohemia (d. 1313)December 24 Khwaju Kermani, Persian poet and mystic (d. 1349)Agnes Haakonsdatter, Norwegian noblewoman and princess (d. 1319)Andrea Pisano (or Pontedera), Italian sculptor and architect (d. 1348)Barlaam of Seminara, Italian cleric, scholar and theologian (d. 1348)Beatrice of Silesia, queen of Germany (House of Piast) (d. 1322)Buton Rinchen Drub, Tibetan Buddhist religious leader (d. 1364)Daichi Sokei, Japanese Buddhist monk, disciple and poet (d. 1366)Giovanni Visconti, Italian cardinal, archbishop and co-ruler (d. 1354)Guido Gonzaga, Italian nobleman and knight (condottiero) (d. 1369)Hugues Quiret, French nobleman, admiral and advisor (d. 1340)Jacob van Artevelde, Flemish merchant and statesman (d. 1345)Jacopo Dondi dell'Orologio, Italian doctor and polymath (d. 1359)Johannes de Muris, French mathematician and astronomer (d. 1344)John Maltravers, English nobleman, knight and governor (d. 1364)John Parricida, German nobleman (House of Habsburg) (d. 1312)Jyotirishwar Thakur, Indian playwright, poet and writer (d. 1350)Ke Jiusi, Chinese landscape painter and calligrapher (d. 1343)Kitabatake Tomoyuki, Japanese nobleman and poet (d. 1332)Kuj Fusazane, Japanese nobleman, official and regent (d. 1327)Peter of Castile, Lord of Cameros, Spanish nobleman and prince (infante) (d. 1319)Pierre Bersuire (or Bercheure), French translator and encyclopaedist (d. 1362)Rabbenu Yerucham, French rabbi and scholar (posek) (d. 1350)Richard de Willoughby, English landowner and politician (d. 1362)Rudolf Hesso, Margrave of Baden-Baden, German nobleman (House of Zhringen) (d. 1335)Sesson Ybai, Japanese Buddhist monk, priest and poet (d. 1347)Theodore I, Marquis of Montferrat ("Palaiologos"), Byzantine nobleman and writer (d. 1338)Willem van Duvenvoorde, Dutch nobleman and knight (d. 1353)January 28 Dervorguilla of Galloway, Scottish noblewoman (b. 1210)February 3 Henry XIII, Duke of Bavaria, German nobleman, co-ruler and knight (b. 1235)March 24 John dal Bastone, Italian monk, priest and preacher (b. 1200)March 26 John Kirkby, English bishop, vice-chancellor and statesmanApril 26 Gaston VII, Viscount of Barn ("Froissard"), French nobleman and knight (b. 1225)May 10 Rudolf II, Duke of Austria, German nobleman (House of Habsburg) (b. 1270)June 8 Beatrice Portinari, Italian muse of Dante (b. 1266)June 13 Shamsuddin II, Mamluk ruler of the Delhi Sultanate (b. 1285)June 23 Henryk IV Probus ("the Righteous"), High Duke of Poland (b. 1258)July 10 Ladislaus IV ("the Cuman"), king of Hungary and Croatia (b. 1262)September 26 Margaret, Maid of Norway, queen of Scotland (b. 1283)November 10 Qalawun ("the Victorious"), Mamluk ruler of Egypt (b. 1222)November 28 Eleanor of Castile, queen consort of England (b. 1241)December 18Herman I, German nobleman (House of Henneberg) (b. 1224)Magnus III (or I) ("Birgersson"), king of Sweden (b. 1240)December 21 Gerhard I, Count of Holstein-Itzehoe, German nobleman, knight and regent (b. 1232)Adelaide, Countess of Auxerre, French noblewoman and ruler (suo jure) (b. 1251)Alice de Lusignan, Countess of Gloucester, French noblewoman (House of Lusignan) (b. 1236)Cecilia Cesarini (or Caecilia), Italian noblewoman and nun (b. 1203)Eison, Japanese Buddhist scholar-monk, disciple and priest (b. 1201)Elizabeth the Cuman, queen of Hungary (House of Arpad) (b. 1244)Fakhr al-Din Mustawfi, Persian finance minister, advisor and vizier^ Engel, Pl (2001). The Realm of St Stephen: A History of Medieval Hungary, 8951526. I.B. Tauris Publishers. p.110. ISBN1-86064-061-3.^ Bartl, Jlius; iaj, Viliam; Kohtova, Mria; Letz, Rbert; Sege, Vladimr; kvarna, Duan (2002). Slovak History: Chronology & Lexicon. Bolchazy-Carducci Publishers, Slovensk Pedegogick Nakladatel'stvo. p.34. ISBN0-86516-444-4.^ Mundill, Robin R. (2002). England's Jewish Solution: Experiment and Expulsion, 1262-1290. Cambridge University Press. ISBN0-521-52026-6.^ David Nicolle (2005). Osprey: Acre 1291 - Bloody sunset of the Crusader states, p. 49. ISBN978-1-84176-862-5.^ Steven Runciman (1952). A History of The Crusades. Vol III: The Kingdom of Acre, p. 343. ISBN978-0-241-29877-0.^ David Nicolle (2005). Osprey: Acre 1291 - Bloody sunset of the Crusader states, p. 52. ISBN978-1-84176-862-5.^ Steven Runciman (1952). A History of The Crusades. Vol III: The Kingdom of Acre, p. 343. ISBN978-0-241-29877-0.^ Steven Runciman (1952). A History of The Crusades. Vol III: The Kingdom of Acre, p. 344. ISBN978-0-241-29877-0.^ Sen, Sailendra (2013). A Textbook of Medieval Indian History, p. 80. Primus Books. ISBN978-9-38060-734-4.^ Williams, Hywel (2005). Cassell's Chronology of World History, p. 151. ISBN0-304-35730-8.^ Kington, J. Climate and Weather. HarperCollins Publishers, 2010.Retrieved from " 3One hundred years, from 1101 to 1200See also: Renaissance of the 12th centuryMillennia2ndmillenniumCenturies11thcentury12thcentury13thcenturyTimelines11thcentury12thcentury13thcenturyState leaders11thcentury12thcentury13thcenturyDecades1100s1110s1120s1130s1140s1150s1160s1170s1180s1190sCategories:Births Deaths Establishments DisestablishmentsvteEastern Hemisphere at the beginning of the 12th centuryThe 12th century is the period from 1101 to 1200 in accordance with the Julian calendar. In the history of European culture, this period is considered part of the High Middle Ages and overlaps with what is often called the "'Golden Age' of the Cistercians". The Golden Age of Islam experienced significant development, particularly in Islamic Spain.In Song dynasty China, an invasion by Jurchens caused a political schism of north and south. The Khmer Empire of Cambodia flourished during this century, while the Fatimids of Egypt were overtaken by the Ayyubid dynasty. Following the expansions of the Ghaznavids and Ghurid Empire, the Muslim conquests in the Indian subcontinent took place at the end of the century.Main article: 1100sThe Ghurid Empire converted to Islam from Buddhism.1101: In July, the Treaty of Alton is signed between Henry I of England and his older brother Robert, Duke of Normandy in which Robert agrees to recognize Henry as king of England in exchange for a yearly stipend and other concessions. The agreement temporarily ends a crisis in the succession of the Anglo-Norman kings.11011103: David the Builder takes over Kakheti and Hereti (now parts of Georgia).1102: King Coloman unites Hungary and Croatia under the Hungarian Crown.1102: Muslims conquer Seoro de Valencia.11031104: A church council is convened by King David the Builder in Urbnisi to reorganize the Georgian Orthodox Church.1104: In the Battle of Ertsukhi, King David the Builder defeats an army of Seljuks.1104: King Jayawarsa of Kadiri (on Java) ascends to the throne.[citation needed]1106: Battle of Tinchebray.11071111: Sigurd I of Norway becomes the first Norwegian king to embark on a crusade to the Holy Land. He fights in Lisbon and on various Mediterranean isles and helps the King of Jerusalem to take Sidon from the Muslims.1108: By the Treaty of Devol, signed in September, Bohemond I of Antioch has to submit to the Byzantine Empire, becoming the vassal of Alexius I.1109: On June 10, Bertrand of Toulouse captures the County of Tripoli (northern Lebanon/western Syria).1109: In the Battle of Nako, Boleslaus III Wrymouth defeats the Pomeranians and re-establishes Polish access to the sea.1109: On August 24, in the Battle of Hundsfeld, Boleslaus III Wrymouth defeats Emperor Henry V of Germany and stops German expansion eastward.Main article: 1110s1111: On April 14, during Henry V's first expedition to Rome, he is crowned Holy Roman Emperor.1113: Paramavishnulok is crowned as King Suryavarman II in Cambodia. He expands the Khmer Empire and builds Angkor Wat during the first half of the century. He establishes diplomatic relations with China.1115: The Georgian army occupies Rustavi in the war with the Muslims.1115: In Java, King Kamesvara of Kadiri ascends to the throne. Janggala ceases to exist and comes under Kadiri domination, highly possible under royal marriage. During his reign, Mpu Dharmaja writes Kakawin Smaradahana, a eulogy for the king which become the inspiration for the Panji cycle tales, which spread across Southeast Asia.[1]1116: The Byzantine army defeats the Turks at Philomelion.1116: Death of doa Jimena Daz, governor of Valencia from 1099 to 1102.c. 1119: The Knights Templar are founded to protect Christian pilgrims in Jerusalem.Main article: 1120sA Black and White Photo of the 12th century Cuenca Cathedral (built from 1182 to 1270) in Cuenca, Spain1120: On January 16, the Council of Nablus, a council of ecclesiastic and secular lords in the crusader Kingdom of Jerusalem, establishes the first written laws for the kingdom.1120: On November 25, William Adelin, the only legitimate son of King Henry I of England, drowns in the White Ship Disaster, leading to a succession crisis which will bring down the Norman monarchy of England.1121: On August 12, in the Battle of Didgori, the greatest military victory in Georgian history, King David the Builder with 45,000 Georgians, 15,000 Kipchak auxiliaries, 500 Alan mercenaries and 100 French Crusaders defeats a much larger Seljuk-led Muslim coalition army.1121: On December 25, St. Norbert and 29 companions make their solemn vows in Premontre, France, establishing the Premonstratensian Order.1122: The Battle of Beroia (Modern-day Stara Zagora, Bulgaria) results in the disappearance of the Pechenegs Turkish tribe as an independent force.1122: On September 23, the Concordat of Worms (Pactum Calixtinum) is drawn up between Emperor Henry V and Pope Calixtus II bringing an end to the first phase of the power struggle between the papacy and the Holy Roman Empire.1122: King David the Builder captures Tbilisi and declares it the capital city of Georgia, ending 400 years of Arab rule.1123: The Jurchen dynasty of China forces Koryo (now Korea) to recognize their suzerainty.1124: In April or May, David I is crowned King of the Scots.1125: On June 11, in the Battle of Azaz, the Crusader states, led by King Baldwin II of Jerusalem, defeat the Seljuk Turks.1125: In November, the Jurchens of the Jin dynasty declare war on the Song dynasty, beginning the JinSong wars.1125: Lothair of Supplinburg, duke of Saxony, is elected Holy Roman Emperor instead of the nearest heir, Frederick of Swabia, beginning the great struggle between Guelphs and Ghibellines.1127: The Northern Song dynasty loses power over northern China to the Jin dynasty.1128: On June 24, the Kingdom of Portugal gains independence from the Kingdom of Len at the Battle of So Mamede; (recognised by Len in 1143).Main article: 1130sThe temple complex of Angkor Wat, built during the reign of Suryavarman II in Cambodia of the Khmer Era.11301180: 50-year drought in what is now the American Southwest.11301138: Papal schism, Pope Innocent II vs. Antipope Anacletus II.1130: On March 26, Sigurd I of Norway dies. A golden era of 95 years comes to an end for Norway as civil wars between the members of Harald Fairhair's family line rage for the remainder of the century.1130: On Christmas Day, Roger II is crowned King of Sicily, the royal title being bestowed on him by Antipope Anacletus II.1132: The Southern Song dynasty establishes China's first permanent standing navy, although China had a long naval history prior. The main admiral's office is at the port of Dinghai.11321183: the Chinese navy increases from a mere 3,000 to 52,000 marine soldiers stationed in 20 different squadrons. During this time, hundreds of treadmill-operated paddle wheel craft are assembled for the navy to fight the Jin dynasty in the north.1135: King Jayabaya of Kadiri ascends to the throne.[2]11351154: The Anarchy takes place, during a period of civil war in England.1136: Suger begins rebuilding the abbey church at St Denis north of Paris, which is regarded as the first major Gothic building.1137: On July 22, the future King Louis VII of France marries Eleanor, the Duchess of Aquitaine.1138: On October 11, the 1138 Aleppo earthquake devastates much of northern Syria.1139: in April, the Second Lateran Council ends the papal schism.1139: On July 5, in the Treaty of Mignano, Pope Innocent II confirms Roger II as King of Sicily, Duke of Apulia, and Prince of Capua and invests him with his titles.1139: On July 25, the Portuguese defeat the Almoravids led by Ali ibn Yusuf in the Battle of Ourique; Prince Afonso Henriques is acclaimed King of Portugal by his soldiers.Main article: 1140sAverroes in a 14th-century painting by Andrea di Bonaiuto11401150: Collapse of the Ancestral Puebloan culture at Chaco Canyon (modern-day New Mexico).1141: The Treaty of Shaoxing ends the conflict between the Jin dynasty and Southern Song dynasty, legally establishing the boundaries of the two countries and forcing the Song dynasty to renounce all claims to its former territories north of the Huai River. The treaty reduces the Southern Song into a quasi-tributary state of the Jurchen Jin dynasty.1143: Manuel I Komnenos is crowned as Byzantine emperor after the death of John II Komnenos.1143: Afonso Henriques is proclaimed King of Portugal by the cortes.1143: The Treaty of Zamora recognizes Portuguese independence from the Kingdom of Len. Portugal also recognizes the suzerainty of the pope.1144: On December 24, Edessa falls to the Atabeg Zengi.11451148: The Second Crusade is launched in response to the fall of the County of Edessa.1147: On October 25, the four-month-long Siege of Lisbon successfully brings the city under definitive Portuguese control, expelling the Moorish overlords.1147: A new Berber dynasty, the Almohads, led by Emir Abd al-Mu'min, takes North Africa from the Almoravides and soon invades the Iberian Peninsula. The Almohads began as a religious movement to rid Islam of impurities.1147: The Wendish Crusade against the Polabian Slavs (or "Wends") in what is now northern and eastern Germany.Main article: 1150s1150: Ramon Berenguer IV, Count of Barcelona marries Petronilla, the Queen of Aragon.1151: The Treaty of Tudiln is signed by Alfonso VII of Len and Raymond Berengar IV, Count of Barcelona, recognizing the Aragonese conquests south of the Jcar and the right to expand in and annex the Kingdom of Murcia.1153: The Treaty of Wallingford, ends the civil war between Empress Matilda and her cousin King Stephen of England fought over the English crown. Stephen acknowledges Matilda's son Henry of Anjou as heir.1153: The First Treaty of Constance is signed between Emperor Frederick I and Pope Eugene III, by the terms of which, the emperor is to prevent any action by Manuel I Comnenus to reestablish the Byzantine Empire on Italian soil and to assist the pope against his enemies in revolt in Rome.1154: the Moroccan-born Muslim geographer Muhammad al-Idrisi publishes his Geography.1154: On December 27, Henry II is crowned King of England at Westminster Abbey.1155: Pope Adrian IV grants overlordship of Ireland to Henry II of England in the bull Laudabiliter.1156: On June 18, the Treaty of Benevento is entered into by Pope Adrian IV and the Norman Kingdom of Sicily. After years of turbulent relations, the popes finally settles down to peace with the Hauteville kings. The kingship of William I is recognized over all Sicily, Apulia, Calabria, Campania, and Capua. The tribute to the pope of 600 schifati agreed upon by Roger II in 1139 at Mignano is affirmed and another 400 shift is added for the new lands.1158: The Treaty of Sahagn ends the war between Castile and Len.Main article: 1160sThe Liuhe Pagoda of Hangzhou, China, 11651161: the Song dynasty Chinese navy, employing gunpowder bombs launched from trebuchets, defeats the enormous Jin dynasty navy in the East China Sea in the Battle of Tangdao and on the Yangtze River in the Battle of Caishi.1161: Kilij Arslan II, Sultan of Rum, makes peace with the Byzantine Empire, recognizing the emperor's primacy.1161: In the siege of Ani, troops from the Kingdom of Georgia take control over the city, only to have it sold for the second time to the Shaddadids, a Kurdish dynasty.1162: Genghis Khan, the founder of the Mongol Empire, is born as Temjin in present-day Mongolia.1163: The Norwegian Law of Succession takes effect.11651182: Tensions and disputes between the Pagan Empire and the Kingdom of Polonnaruwa causes the Sinhalese under Parakramabahu the Great to raid Burma.1168: King Valdemar I of Denmark conquers Arkona on the Island of Rgen, the strongest pagan fortress and temple in northern Europe.1169: Political disputes within the Pandya Empire sparks the decade-long Pandyan Civil War.1169: On May 1, the Norman invasion of Ireland begins. Richard fitzGilbert de Clare ('Strongbow') allies with the exiled Irish chief, Dermot MacMurrough, to help him recover his kingdom of Leinster.Main article: 1170sThe defense of the Carroccio during the battle of Legnano (1176) by Amos Cassioli (18321891)1170: The Treaty of Sahagn is signed by Alfonso VIII of Castile and Alfonso II of Aragon. Based on the terms of the accord, Alfonso VIII agrees to provide Alfonso II with three hostages, to be used as tribute payments owed by Ibn Mardan of Valencia and Murcia.1170: On December 29, Thomas Becket is murdered in Canterbury Cathedral.1171: Saladin deposes the last Fatimid Caliph Al-'id and establishes the Ayyubid dynasty.1171: On November 11, Henry II of England lands in Ireland to assert his claim as Lord of Ireland.1172: The Pandyan city of Madurai is sacked by the Sinhalese army due to an attempt to drive off the rival throne claimant, Kulasekara Pandyan.1173: Sinhalese king Parakramabahu the Great gains a decisive victory by invading the Chola Empire as an ally of the Pandyas in the Pandyan Civil War.1174: On July 12, William I of Scotland is captured by the English in the Battle of Alnwick. He accepts the feudal overlordship of the English crown and pays ceremonial allegiance at York.1175: Hnen Shnin (Genk) founds the Jdo sh (Pure Land) sect of Buddhism.1175: The Treaty of Windsor is signed by King Henry II of England and the High King of Ireland, Ruaidr Ua Conchobair.1176: On May 29, Frederick Barbarossa's forces are defeated in the Battle of Legnano by the Lombard League which results in the emperor's acknowledgment of the pope's sovereignty over the Papal States and Alexander acknowledging the emperor's overlordship of the imperial Church.1176: On September 17, The Battle of Myriokephalon (Myriocephalum; Turkish: Miryakefalon Sava) is fought between the Byzantine Empire and the Seljuk Turks in Phrygia. It is a serious reversal for the Byzantine forces and will be the final, unsuccessful, effort by the Byzantines to recover the interior of Anatolia from the Seljuk Turks.1177: The Treaty or Peace of Venice is signed by the papacy and its allies, and Frederick I, Holy Roman Emperor. The Norman Kingdom of Sicily also participates in negotiations and the treaty thereby determines the political course of all of Italy for the next several years.1178: Chinese writer Zhou Qufei, a Guangzhou customs officer, writes of an island far west in the Indian Ocean (possibly Madagascar), from where people with skin "as black as lacquer" and with frizzy hair were captured and purchased as slaves by Arab merchants.1179: The Treaty of Cazola (Cazorla) is signed by Alfonso II of Aragon and Alfonso VIII of Castile, dividing Andalusia into separate zones of conquest for the two kingdoms, so that the work of the Reconquista would not be stymied by internecine feuding.Main article: 1180s1180: The Portuguese Navy defeats a Muslim fleet off the coast of Cape Espichel.11801185: the Genpei War in Japan.1181: Parakramabahu the Great conducts a large-scale raid on Burma, after a ship transporting a Sinhalese princess to the Khmer Empire is attacked by Burmese naval fleets.1182: Religious reformations of Theravada Buddhism in Pagan Burma under the patronage of Narapatisithu are continued with the ...

fractions, example, by using visual fraction models and equations to represent the problem. Grade 7: Number System (7.NS.A.2a)Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1)=1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. Grade 7: Number System (7.NS.A.2b)Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then \left(\cfrac{p}{q}\right) = \cfrac{(p)}{q} = \cfrac{p}{(q)} \, . Interpret quotients of rational numbers by describing real-world contexts. Use this quiz to check your grade 4 to 6 students understanding of fraction operations. 10+ questions with answers covering a range of 4th to 6th grade fraction operations topics to identify areas of strength and support! DOWNLOAD FREE x Use this quiz to check your grade 4 to 6 students understanding of fraction operations. 10+ questions with answers covering a range of 4th to 6th grade fraction operations topics to identify areas of strength and support! DOWNLOAD FREE In order to write the multiplicative inverse of a number: If the number is a whole number, mixed number, decimal, or integer, write it as an improper fraction. Flip the fraction by switching the numerator and denominator. Check to make sure the product is \bf{1} . Find the multiplicative inverse of 10 . If the number is a whole number, mixed number, decimal, or integer, write it as an improper fraction. 10=\cfrac{10}{1} 2Flip the fraction by switching the numerator and denominator. \cfrac{10}{1} \rightarrow \cfrac{1}{10} 10 becomes the denominator, and 1 becomes the numerator. 3Check to make sure the product is \bf{1} . \cfrac{10}{1} \times \cfrac{1}{10}=\cfrac{10}{10}=1 The multiplicative inverse of 10 is \cfrac{1}{10} \, . Find the multiplicative inverse of \cfrac{4}{7} . If the number is a whole number, mixed number, decimal, or integer, write it as an improper fraction. \cfrac{4}{7} \, is a proper fraction. Flip the fraction by switching the numerator and denominator. \cfrac{4}{7} \rightarrow \cfrac{7}{4} 4 becomes the denominator, and 7 becomes the numerator. Check to make sure the product is \bf{1} . \cfrac{4}{7} \times \cfrac{7}{4}=\cfrac{28}{28}=1 \cfrac{7}{4} \, is the multiplicative inverse of \cfrac{4}{7} . Find the multiplicative inverse of a 1 \cfrac{2}{3} . If the number is a whole number, mixed number, decimal, or integer, write it as an improper fraction. 1 \cfrac{2}{3} =\cfrac{5}{3} Flip the fraction by switching the numerator and denominator. \cfrac{5}{3} \rightarrow \cfrac{3}{5} 5 becomes the denominator, and 3 becomes the numerator. Check to make sure the product is \bf{1} . \cfrac{5}{3} \times \cfrac{3}{5}=\cfrac{15}{15}=1 \cfrac{3}{5} \, is the multiplicative inverse of \cfrac{5}{3} or 1 \cfrac{2}{3} . Find the multiplicative inverse of 0.13 . If the number is a whole number, mixed number, decimal, or integer, write it as an improper fraction. 0.13 is thirteen hundredths, which is \cfrac{13}{100} . Flip the fraction by switching the numerator and denominator. \cfrac{13}{100} \rightarrow \cfrac{100}{13} 13 becomes the denominator, and 100 becomes the numerator. Check to make sure the product is \bf{1} . \cfrac{13}{100} \times \cfrac{100}{13}=\cfrac{1300}{1300}=1 \cfrac{100}{13} \, is the multiplicative inverse of 0.13\left(\cfrac{13}{100}\right) . Find the multiplicative inverse of -17 . If the number is a whole number, mixed number, decimal, or integer, write it as an improper fraction. -17=\cfrac{-17}{1} Flip the fraction by switching the numerator and denominator. \cfrac{-17}{1} \rightarrow \cfrac{1}{-17} Check to make sure the product is \bf{1} . \cfrac{-17}{1} \times \cfrac{1}{-17}=\cfrac{-17}{-17}=\cfrac{17}{17}=1 The multiplicative inverse of -17 is \cfrac{1}{-17} \text { or }-\cfrac{1}{17} . Find the multiplicative inverse of -1 \cfrac{2}{9} . If the number is a whole number, mixed number, decimal, or integer, write it as an improper fraction. -1 \cfrac{2}{9}=\cfrac{-11}{9} Flip the fraction by switching the numerator and denominator. \cfrac{-11}{9} \rightarrow \cfrac{9}{-11} -11 becomes the denominator, and 9 becomes the numerator. Check to make sure the product is \bf{1} . \cfrac{-11}{9} \times \cfrac{9}{-11}=\cfrac{-99}{-99}=\cfrac{99}{99}=1 -\cfrac{9}{11} is the multiplicative inverse of -1 \cfrac{2}{9}\left(\cfrac{-11}{9}\right) Reinforce that the multiplicative inverse is also the reciprocal. Have students discover the multiplicative inverse of numbers on their own by strategically asking questions such as, what number multiplied to 5 will give a product of 1? When working with multiplicative inverse, have students see that the reciprocal of a unit fraction is a whole number. Although worksheets serve a purpose in the classroom and can help with skill practice and test prep practice, having students discover the mathematical concepts is more meaningful for building long lasting understanding. Provide students with calculators or multiplication tables so that they do not get frustrated making calculations, but rather develop an understanding of the topic. Trying to find the reciprocal of zeroZero does not have a reciprocal. This is because we can think about 0 as being \cfrac{0}{1}. When the numerator and the denominator are flipped it becomes \cfrac{1}{0} or 1 \div 0 which is undefined (it does not exist). Forgetting that a whole number can be written as an improper fractionWhole numbers can be written as improper fractions. For example, 10 can be written as \cfrac{10}{1}. Write 33 as an improper fraction, 33=\cfrac{33}{1} Flip the numerator and the denominator. 33 becomes the denominator and 1 becomes the numerator. Check that the product of the number and its multiplicative inverse is 1. \cfrac{33}{1} \times \cfrac{1}{33}=\cfrac{33}{33}=1 \cfrac{10}{13} \, is already a proper fraction. Flip the numerator and the denominator. 10 becomes the denominator and 13 becomes the numerator. Check that the product of the number and its multiplicative inverse is 1. \cfrac{10}{13} \times \cfrac{13}{10}=\cfrac{130}{130}=1 The multiplicative inverse of \cfrac{10}{13} \, is \cfrac{13}{10} . The multiplicative inverse of -11 when multiplied to -11 will make the product equal to 1. Make -11 into a fraction, \cfrac{-11}{1} \, . Flip the numerator and the denominator. -11 becomes the denominator and 1 becomes the numerator. The multiplicative of -11 is \cfrac{1}{-11} or -\cfrac{1}{11} \, . \cfrac{-11}{1} \times \cfrac{1}{-11}=\cfrac{-11}{-11}=\cfrac{11}{11}=1 -3 \cfrac{3}{7} \, change to an improper fraction, \cfrac{-24}{7} Flip the numerator and the denominator. -24 becomes the denominator and 7 becomes the numerator. The multiplicative inverse is \cfrac{7}{-24} or -\cfrac{7}{24} . \cfrac{-24}{7} \times \cfrac{7}{-24}=\cfrac{-168}{-168}=\cfrac{168}{168}=1 Change 0.27 to a fraction, \cfrac{27}{100}. Flip the numerator and the denominator. 27 becomes the denominator and 100 becomes the numerator, \cfrac{100}{27} \, . \cfrac{27}{100} \times \cfrac{100}{27}=\cfrac{2700}{2700}=1 The multiplicative inverse of 0.27 \left(\cfrac{27}{100}\right) is \cfrac{100}{27}. Change -5.1 to an improper fraction. -5.1=-5 \cfrac{1}{10}=\cfrac{-51}{10} Flip the numerator and the denominator. -51 becomes the denominator and 10 becomes the numerator. The multiplicative inverse of -5.1\left(\cfrac{-51}{10}\right) is -\cfrac{10}{51} \, . \cfrac{-51}{10} \times \cfrac{10}{-51}=\cfrac{-510}{-510}=\cfrac{510}{510}=1 Is there a multiplicative inverse of any real number or complex number? Rational numbers (natural numbers, whole numbers, integers, fractions/decimals) and irrational numbers have multiplicative inverses. The only number that does not have a multiplicative inverse is 0. The multiplicative inverse of any number a is \cfrac{1}{a} \, . For example, the reciprocal of 5 can be written as 1 \div 5 or \cfrac{1}{5} \, . 5 \times \cfrac{1}{5}=1 \, . \Pi is an irrational number.The multiplicative inverse of \Pi is 1 \div \Pi or \cfrac{1}{\Pi} \, . \; \Pi \times \cfrac{1}{\Pi}=1 . To find the multiplicative inverse of 0 is 1 \div 0 or \cfrac{1}{0} \, which does not exist because you cannot divide by 0. Complex numbers, which you will study in great depth in an Algebra 2 class, also have multiplicative inverses.The complex number z has \cfrac{1}{z} \, as its multiplicative inverse. All types of numbers have multiplicative inverses. Can you find the multiplicative inverse of a multiplicative inverse? Yes, if you find the multiplicative inverse of a multiplicative inverse, you will wind up back at the original given number. For example, the multiplicative inverse of 5 (written as \cfrac{5}{1} \, ) is \cfrac{1}{5} \, . If you then take the multiplicative inverse of \cfrac{1}{5} \, , it will be \cfrac{5}{1} or 5. \; 5 is the original given number. Is the multiplicative inverse of a number just turning the fraction upside down? The multiplicative inverse of a number is always a number that when multiplied by the original number gives a product of 1. So, it is often just flipping the fraction around. What is the reciprocal of a number? The reciprocal of a number is the multiplicative inverse. What is the multiplicative identity? The multiplicative identity is 1 because a number times 1 has a product of that number. What is the additive inverse? The additive inverse is a number when added to the original number has a sum of 0. For example, the additive inverse of 5 is -5 because 5+(-5)=0. What is an extended euclidean algorithm? The euclidean algorithm is a step by step method used for finding the greatest common divisor (gcd) between two positive numbers and writing the gcd as an integer linear combination. This is something explored in an advanced high school or college level. What is modular arithmetic? Modular arithmetic is a branch of arithmetic where the only concern is with the remainder after dividing two numbers.There is an operator that is used to determine the remainder of a division operation called the modulus operator or the modulo operator. Decimals Exponents Algebraic expression Algebra At Third Space Learning, we specialize in helping teachers and school leaders to provide personalized math support for more of their students through high-quality, online one-on-one math tutoring delivered by subject experts. Each week, our tutors support thousands of students who are at risk of not meeting their grade-level expectations, and help accelerate their progress and boost their confidence. Find out how we can help your students achieve success with our math tutoring programs. We use essential and non-essential cookies to improve the experience on our website. Please read our Cookies Policy for information on how we use cookies and how to manage or change your cookie settings.AcceptPrivacy & Cookies Policy Use our calculator to get the reciprocal of 5. Also, learn what is the reciprocal of a number or of a fraction as well as use our step-by-step calculator. Reciprocal of a Number or of a Fraction Calculator A multiplicative inverse or reciprocal for a number n, denoted by 1n or n1 (n to the power of minus one), is a number which when multiplied by n, their product is 1. In other words, the reciprocal of any number is one divided by that number. The reciprocal of a fraction xy is yx. To find the multiplicative inverse of a real number, just divide 1 by that number. Examples: The reciprocal of 7 is one senventh = 1/7 = 0,142857142857...) The reciprocal of 0.333... is 1 divided by 0.333..., or 3. While every effort is made to ensure the accuracy of the information provided on this website, neither this website nor its authors are responsible for any errors or omissions. Therefore, the contents of this site are not suitable for any use involving risk to health, finances or property. Page 2 Use our calculator to get the reciprocal of 5 5/17. Also, learn what is the reciprocal of a number or of a fraction as well as use our step-by-step calculator. Reciprocal of a Number or of a Fraction Calculator A multiplicative inverse or reciprocal for a number n, denoted by 1n or n1 (n to the power of minus one), is a number which when multiplied by n, their product is 1. In other words, the reciprocal of any number is one divided by that number. The reciprocal of a fraction xy is yx. To find the multiplicative inverse of a real number, just divide 1 by that number. 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In other words, the reciprocal of any number is one divided by that number. The reciprocal of a fraction xy is yx. To find the multiplicative inverse of a real number, just divide 1 by that number. Examples: The reciprocal of 7 is one senventh = 1/7 = 0,142857142857...) The reciprocal of 0.333... is 1 divided by 0.333..., or 3. While every effort is made to ensure the accuracy of the information provided on this website, neither this website nor its authors are responsible for any errors or omissions. Therefore, the contents of this site are not suitable for any use involving risk to health, finances or property. Page 6 Use our calculator to get the reciprocal of 1 10/18. Also, learn what is the reciprocal of a number or of a fraction as well as use our step-by-step calculator. 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Reciprocal of a Number or of a Fraction Calculator A multiplicative inverse or reciprocal for a number n, denoted by 1n or n1 (n to the power of minus one), is a number which when multiplied by n, their product is 1. In other words, the reciprocal of any number is one divided by that number. The reciprocal of a fraction xy is yx. To find the multiplicative inverse of a real number, just divide 1 by that number. Examples: The reciprocal of 7 is one senventh = 1/7 = 0,142857142857...) The reciprocal of 0.333... is 1 divided by 0.333..., or 3. While every effort is made to ensure the accuracy of the information provided on this website, neither this website nor its authors are responsible for any errors or omissions. Therefore, the contents of this site are not suitable for any use involving risk to health, finances or property. Page 25 Use our calculator to get the reciprocal of 1 7/14. 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Page 26 Use our calculator to get the reciprocal of 2 7/8. Also, learn what is the reciprocal of a number or of a fraction as well as use our step-by-step calculator. Reciprocal of a Number or of a Fraction Calculator A multiplicative inverse or reciprocal for a number n, denoted by 1n or n1 (n to the power of minus one), is a number which when multiplied by n, their product is 1. In other words, the reciprocal of any number is one divided by that number. The reciprocal of a fraction xy is yx. To find the multiplicative inverse of a real number, just divide 1 by that number. Examples: The reciprocal of 7 is one senventh = 1/7 = 0,142857142857...) The reciprocal of 0.333... is 1 divided by 0.333..., or 3. While every effort is made to ensure the accuracy of the information provided on this website, neither this website nor its authors are responsible for any errors or omissions. Therefore, the contents of this site are not suitable for any use involving risk to health, finances or property.Number which when multiplied by x equals 1This article needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.Find sources:"Multiplicative inverse"news newspapers books scholar JSTOR (July 2025) (Learn how and when to remove this message)"Reciprocal (mathematics)" redirects here; not to be confused with Reciprocation (geometry).The reciprocal function: y = 1/x. For every x except 0, y represents its multiplicative inverse. The graph forms a rectangular hyperbola.In mathematics, a multiplicative inverse or reciprocal for a number x, denoted by 1/x or x1, is a number which when multiplied by x yields the multiplicative identity, 1. The multiplicative inverse of a fraction a/b is b/a. For the multiplicative inverse of a real number, divide 1 by the number. For example, the reciprocal of 5 is one fifth (1/5 or 0.2), and the reciprocal of 0.25 is 1 divided by 0.25, or 4. The reciprocal function, the function f(x) that maps x to 1/x, is one of the simplest examples of a function which is its own inverse (an involution).Multiplying by a number is the same as dividing by its reciprocal and vice versa. For example, multiplication by 4/5 (or 0.8) will give the same result as division by 5/4 (or 1.25). Therefore, multiplication by a number followed by multiplication by its reciprocal yields the original number (since the product of the number and its reciprocal is 1).The term reciprocal was in common use at least as far back as the third edition of Encyclopdia Britannica (1797) to describe two numbers whose product is 1; geometrical quantities in inverse proportion are described as reciprocall in a 1570 translation of Euclid's Elements.[1]In the phrase multiplicative inverse, the qualifier multiplicative is often omitted and then tacitly understood (in contrast to the additive inverse). Multiplicative inverses can be defined over many mathematical domains as well as numbers. In these cases it can happen that ab ba; then "inverse" typically implies that an element is both a left and right inverse.The notation f 1 is sometimes also used for the inverse function of the function f, which is for most functions not equal to the multiplicative inverse. For example, the multiplicative inverse 1/(sin x) = (sin x)1 is the cosecant of x, and not the inverse sine of x denoted by sin1 x or arcsin x. The terminology difference reciprocal versus inverse is not sufficient to make this distinction, since many authors prefer the opposite naming convention, probably for historical reasons (for example in French, the inverse function is preferably called the bijection rciproque).In the real numbers, zero does not have a reciprocal (division by zero is undefined) because no real number multiplied by 0 produces 1 (the product of any number with zero is zero). With the exception of zero, reciprocals of every real number are real, reciprocals of every rational number are rational, and reciprocals of every complex number are complex. The property that every element other than zero has a multiplicative inverse is part of the definition of a field, of which these are all examples. On the other hand, no integer other than 1 and 1 has an integer reciprocal, and so the integers are not a field.In modular arithmetic, the modular multiplicative inverse of a is also defined: it is the number x such that ax 1 (mod n). This multiplicative inverse exists if and only if a and n are coprime. For example, the inverse of 3 modulo 11 is 4 because 4 3 1 (mod 11). The extended Euclidean algorithm may be used to compute it.The sedenions are an algebra in which every nonzero element has a multiplicative inverse, but which nonetheless has divisors of zero, that is, nonzero elements x, y such that xy= 0.A square matrix has an inverse if and only if its determinant has an inverse in the coefficient ring. The linear map that has the matrix A1 with respect to some base is then the inverse function of the map having A as matrix in the same base. Thus, the two distinct notions of the inverse of a function are strongly related in this case, but they still do not coincide, since the multiplicative inverse of Ax would be (Ax)1, not A1x.These two notions of an inverse function do sometimes coincide, for example for the function f ( x ) = x i = e i ln ( x ) {\displaystyle f(x)=x^{i}=e^{i\ln(x)}} where ln {\displaystyle \ln } is the principal branch of the complex logarithm and e < | x | < e {\displaystyle e^{-\pi }0} gives an infinite number of irrational numbers that differ with their reciprocal by an integer. For example, f ( 2 ) {\displaystyle f(2)} is the irrational 2 + 5 {\displaystyle 2+{\sqrt {5}}} . Its reciprocal 1 / ( 2 + 5 ) {\displaystyle 1/(2+{\sqrt {5}})} is 2 + 5 {\displaystyle -2+{\sqrt {5}}} , exactly 4 {\displaystyle 4} less. Such irrational numbers share an evident property: they have the same fractional part as their reciprocal, since these numbers differ by an integer.The reciprocal function plays an important role in simple continued fractions, which have a number of remarkable properties relating to the representation of (both rational and) irrational numbers.If the multiplication is associative, an element x with a multiplicative inverse cannot be a zero divisor (x is a zero divisor if some nonzero y, xy = 0). To see this, it is sufficient to multiply the equation xy = 0 by the inverse of x (on the left), and then simplify using associativity. In the absence of associativity, the sedenions provide a counterexample.The converse does not hold: an element which is not a zero divisor is not guaranteed to have a multiplicative inverse.Within Z, all integers except 1, 0, 1 provide examples; they are not zero divisors nor do they have inverses in Z.If the ring or algebra is finite, however, then all elements a which are not zero divisors do have a (left and right) inverse. For, first observe that the map f(x) = ax must be injective: f(x) = f(y) implies x = y: a x = a y a x a y = 0 a ( x y ) = 0 x y = 0 x = y . {\displaystyle {\begin{aligned}ax&=ay\\&\quad \Rightarrow &\quad ax-ay=0\\&\quad \Rightarrow &\quad a(x-y)=0\\&\quad \Rightarrow &\quad x-y=0\\&\quad \Rightarrow &\quad x=y.\end{aligned}}} Distinct elements map to distinct elements, so the image consists of the same finite number of elements, and the map is necessarily surjective. Specifically, (namely multiplication by a) must map some element x to 1, ax = 1, so that x is an inverse for a.The expansion of the reciprocal 1/q in any base can also act[3] as a source of pseudo-random numbers, if q is a "suitable" safe prime, a prime of the form 2p+1 where p is also a prime. A sequence of pseudo-random numbers of length q1 will be produced by the expansion.Division (mathematics)Exponential decayFractionGroup (mathematics)HyperbolaInverse distributionList of sums of reciprocalsRepeating decimal6-sphere coordinatesUnit fractions reciprocals of integersZeros and poles^ "In equall Parallelipipedons the bases are reciprokall to their altitudes". OED "Reciprocal" 3a. Sir Henry Billingsley translation of Elements XI, 34.^ Anthony, Dr. "Proof that INT(1/x)dx = lnx". Ask Dr. Math. Drexel University. Retrieved 22 March 2013.^ Mitchell, Douglas W., "A nonlinear random number generator with known, long cycle length", Cryptologia 17, January 1993, 5562.Maximally Periodic Reciprocals, Matthews R.A.J. Bulletin of the Institute of Mathematics and its Applications vol 28 pp 147148 1992Retrieved from " concept of multiplicative inverse plays a key role in mathematics and is widely applicable to both real-life situations and exam scenarios. Understanding this topic makes fraction division, error checking in calculations, and many algebra problems much easier for students. What Is Multiplicative Inverse?A multiplicative inverse is defined as the number which, when multiplied with the original number, gives a product of 1. In simple words, the multiplicative inverse of any non-zero number x is 1/x. Youll see this idea in fractions, rational numbers, and algebraic expressions. Key Formula for Multiplicative InverseHeres the standard formula: \( \text{Multiplicative Inverse of } x = \frac{1}{x} \) For a fraction \( \frac{a}{b} \), multiplicative inverse is \( \frac{b}{a} \) (as long as neither \( a \) nor \( b \) is zero). Cross-Disciplinary UsageMultiplicative inverse is not only useful in Maths but also plays an important role in Physics (for unit conversions), Computer Science (for algorithms involving division), and daily logical reasoning. Students preparing for JEE, Olympiads, or school exams will see its relevance in many word problems and operations. Step-by-Step IllustrationGiven a number, say \( x = 5 \)Multiplicative inverse = \( \frac{1}{5} \)For a fraction, like \( \frac{3}{4} \):Multiplicative inverse = \( \frac{4}{3} \)For a negative integer, like \( -8 \):Multiplicative inverse = \( -\frac{1}{8} \)Final check: Multiply the number by its multiplicative inverse the answer should always be 1. For example, \( 5 \times \frac{1}{5} = 1 \), \( \frac{3}{4} \times \frac{4}{3} = 1 \). Speed Trick or Vedic ShortcutHeres a quick shortcut: To find the multiplicative inverse of a fraction, just flip (swap) the numerator and denominator. For decimals, convert to fraction, then flip.Example Trick: What is the multiplicative inverse of \( 0.2 \)?Write \( 0.2 \) as a fraction: \( 0.2 = \frac{2}{10} = \frac{1}{5} \)Flip: \( \frac{1}{5} \) becomes \( 5 \)Multiplicative inverse of \( 0.2 \) is 5Shortcuts like these are valuable for saving time during exams like NTSE, Olympiads, and even entrance tests. Vedantu sessions often teach such easy approaches to help build your calculation speed and confidence. Common Questions and Answers Type Example Multiplicative Inverse Check Integer 4 1/4 4 1/4 = 1 Negative Integer -12 -1/12 -12 -1/12 = 1 Fraction -13/19 -19/13 Product = 1 Zero 0 Not defined 0 anything = 0 Try These YourselfFind the multiplicative inverse of \( -\frac{7}{9} \).What is the multiplicative inverse of \( \frac{5}{8} \)?Does zero have a multiplicative inverse?Find the multiplicative inverse of 1. Frequent Errors and MisunderstandingsMixing up multiplicative inverse with additive inverse.Remember: Additive inverse means sum is zero; multiplicative inverse means product is one.Trying to find an inverse for zero (it does NOT exist!).Forgetting to flip both the numerator and denominators signs for negative fractions.Not checking the answer by multiplying always verify: original inverse = 1. Relation to Other ConceptsThe idea of multiplicative inverse connects closely with topics such as reciprocal (they are the same in maths!) and multiplicative identity (why the product must be 1). Its also essential when you divide fractions or solve algebraic equations involving ratios. Classroom TipA quick way to remember the multiplicative inverse is to think: What do I multiply this by to get one? For fractions, just flip. For decimals, change to fraction then flip. Vedantu teachers use hand-tricks, doodles, and lots of practice examples to make this topic super easy in live classes. Summary Table: Multiplicative Inverse Rules Number Type Rule Example Positive integer 1 over the number 7 1/7 Negative Integer Negative, 1 over the number -4 -1/4 Fraction Swap numerator & denominator 3/5 5/3 Zero None / undefined 0 No inverse One Self-inverse 1 1 We explored multiplicative inversefrom definition, formula, tricks, examples, and connection with other maths ideas. The more you practice, the easier it gets to spot and use inverses everywhere. Keep practicing with Vedantu for complete confidence in all maths operations! Continue Learning: Share copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution You must give appropriate credit , provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Inverse means the opposite in effect. The reverse of. It is a general idea in mathematics and has many meanings. Here are a few. The Inverse of Adding is Subtracting Adding moves us one way, subtracting moves us the opposite way. Example: 20 + 9 = 29 can be reversed by 29 9 = 20 (back to where we started) And the other way around: Example: 15 3 = 12 can be reversed by 12 + 3 = 15 (back to where we started) Additive Inverse The additive inverse is what we add to a number to get zero. Another example: the additive inverse of +7 is 7. The Inverse of Multiplying is Dividing Multiplying can be "undone" by dividing. Example: 5 9 = 45 can be reversed by 45 / 9 = 5 It works the other way around too, dividing can be undone by multiplying. Example: 10 / 2 = 5 can be reversed by 5 2 = 10 Multiplicative Inverse The multiplicative inverse is what we multiply a number by to get 1. It is the reciprocal of a number. Example: The multiplicative inverse of 5 is 15, because 5 15 = 1 But Not With 0 We can't divide by 0, so don't try! Example: 5 0 = 0 cannot be reversed by 0/0 = ??? Doing a function and then its inverse will give us back the original value: When the function f turns the apple into a banana,Then the inverse function f-1 turns the banana back to the apple Here we have the function f(x) = 2x+3, written as a flow diagram: The Inverse Function goes the other way: So the inverse of: 2x+3 is: (y3)/2 Read Inverse of a Function to find out more. Inverse Sine, Cosine and Tangent The sine function sin takes angle and gives the ratio opposite hypotenuse The inverse sine function sin-1 takes the ratio oppositehypotenuse and gives angle A similar idea applies to cosine, tangent and other trig functions. Read Inverse Sine, Cosine, Tangent to find out more. The Inverse of an Exponent is a Logarithm Read logarithms to find out more, but basically: The logarithm tells us what the exponent is! Copyright 2024 Rod Pierce

**What is the multiplicative inverse of 5 6. What is the multiplicative inverse of 5 8. What is the multiplicative inverse of 5/6. What is the multiplicative inverse of 5/8. What is the multiplicative inverse of 5 3i. What is the multiplicative inverse of 5/4. What is the multiplicative inverse of 5/7. What is the multiplicative inverse of 5 12. What is the multiplicative inverse of 5 / 11. What is the multiplicative inverse of 5 4. What is the multiplicative inverse of 5 2. What is the multiplicative inverse of 5 7. What is the multiplicative inverse of 54 mod 61. What is the multiplicative inverse of 5 / 3. What is the multiplicative inverse of 5 / 9.**

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