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Hanna Pamua, PhDHanna (Hania) Pamua holds a Ph.D. in Bioacoustics / Mechanical Engineering, obtained at AGH University of Science and Technology. She has participated in research work in labs in France and the UK and presented papers at several international conferences. Hania has a penchant for photography and graphic design. When not in the office, shes probably traveling, hiking, or out in the field, watching birds and recording their calls. See full profileCheck our editorial policyBogna Szyk and Adena BennAdena Benn is a Guyanese teacher with a degree in computer science who is always reading and learning. She loves problem-solving, everything tech, and working with teenagers. She has a passion for education and is especially interested in how children learn and the teaching methods that best suit their learning styles. She grew up on a farm in Pomeroon, Guyana, where she worked alongside her parents and siblings. As such, she is just as comfortable growing plants as teaching in the classroom. In her early life, she also gained expertise as a seamstress, which she learned from her mother. By grade 9, she had already acquired her dressmaker's certificate. Today she uses her skills to design many items for her family. In her free time, Adena loves to read, take long walks, write childrens stories and poetry, travel, or spend time with her family. See full profileCheck our editorial policy2 651 people find this calculator helpfulThis triangle area calculator can help in determining the triangle area. The basic triangle area formula needs to have a base and height given, but what if we don't have it? How can we calculate the area of a triangle with 3 sides only? The triangle area calculator is here for you. Give it a go! If you are still unsure how to find the area of a triangle, check the description below.A triangle is one of the most basic shapes in geometry. The best known and the most straightforward formula, which almost everybody remembers from school, is:area = 0.5 b h, where b is the length of the base of the triangle, and h is the height/altitude of the triangle.However, sometimes it's hard to find the height of the triangle. In that cases, many other equations may be used, depending on what you know about the triangle:Three sides (SSS)If you know the lengths of all sides, use the Heron's formula:area = 0.25 ( (a + b + c) (-a + b + c) (a - b + c) (a + b - c) )Two sides and the angle between them (SAS)You can calculate the area of a triangle easily from trigonometry:area = 0.5 a b sin()Two angles and a side between them (ASA)There are different triangle area formulas versions - you can use, for example, trigonometry or law of sines to derive it:area = a sin() sin() / (2 sin( + ))If you are looking for other formulas or calculators connected with triangles, check out this right triangle calculator, pythagorean theorem calculator, and law of cosines calculator.Assume that we know two sides and the angle between them:Type the first side length. It can be equal to 9 inches in our example.Determine the angle between two known sides. For example, 30 degrees.Enter the second triangle side. Let's choose 5 in.Watch our triangle area calculator performing all calculations for you! The area for our case is equal to 11.25 in.To calculate the area of an equilateral triangle, you only need to know the side:area = a 3 / 4Since 3 / 4 is approximately 0.433, we can formulate a quick recipe: to approximate the area of an equilateral triangle, square the side's length and then multiply by 0.433.Although we prepared a separate calculator for the equilateral triangle area, you can quickly calculate it in this triangle area calculator. Simply use the subpart for the area of a triangle with 3 sides - as you know, every side has the same length in an equilateral triangle. It's possible to calculate that area also in the angle-side-angle or side-angle-side version - you probably remember that every angle in the equilateral triangle is equal to 60 degrees (/3 rad).FAQsIf you know the lengths of all sides (a, b, and c) of a triangle, you can compute its area:Calculate half of the perimeter (a + b + c). Denote this value by s.Compute s - a, s - b, and s - c.Multiply the three numbers from Step 2.Multiply the result by s.Take the square root of the result.This is the area of your triangle - well done! The method we've used is called Heron's formula.You can't determine the area of a triangle if you know only the angles. This is because there are infinitely many triangles with the same angles. You must know at least one side (or height) of your triangle to determine its area.To compute the area of a right triangle, you only need to multiply the lengths of the legs of your triangle and then divide the result by 2. For instance, if the legs are 3 in and 4 in, then the area is 3 4 /2 = 12 / 2 = 6 in sq.The area is approximately 43.3. The precise answer is 25 3. To get this answer, recall the formula for the area of an equilateral triangle of side a reads area = a2 3 / 4. For the triangle with side 10 we obtain area = 102 3 / 4 = 100 3 / 4 = 25 3, which is approximately equal to 43.3.Did we solve your problem today?Check out 19 similar triangle calculators ,the free encyclopedia that anyone can edit.117,937 active editors 7,000,968 articles in EnglishThe English-language Wikipedia thanks its contributors for creating more than seven million articles! Learn how you can take part in the encyclopedia's continued improvement.Andrea Navagero (14831529) was a Venetian diplomat and writer. He entered the Great Council of Venice at the age of twenty, five years younger than was normal at the time. He edited manuscripts at the Aldine Press, garnering a reputation as a scholar and a highly skilled writer. In 1515, he was appointed the official historian of the Republic of Venice as well as the caretaker of a library containing the collection of the scholar Bessarion. Navagero was named the Venetian ambassador to Spain in 1523 and navigated the volatile diplomatic climate caused by the conflict between CharlesV of Spain and FrancisI of France. By the time Navagero arrived back in Venice in 1528, he had grown disillusioned with politics and wished to return to editing manuscripts and cultivating his prized gardens. Much to his dismay, he was appointed ambassador to France in January 1529. After traveling to meet with FrancisI, he fell ill and died that May. (Fullarticle...)Recently featured: Nosy KombaMcDonnell Douglas Phantom in UK serviceTransportation during the 2024 Summer Olympics and ParalympicsArchiveBy emailMore featured articlesAboutEngraving of the Great Pyramid of Giza... that the 1572 Eight Wonders of the World (engraving pictured) is the source of the modern list of classical Seven Wonders of the World?... that Hedwig Tam gained 20 pounds to play a postpartum mother in Montages of a Modern Motherhood?... that the Alfonsine Ordinances punished Jews and Muslims with enslavement if they disguised their identity with the intention of "sinning with Christian women"?... that even though he had never seen a field hockey game, Willy Miranda became a high school coach and went on to win over 450 games across a 42-year tenure?... that a false viral rumour claimed 42 people committed suicide after their homoerotic fan art was included in the film Crazy About One Direction?... that an Arizona TV station put a satellite dish in a vacant swimming pool?... that 42 years after Jilly Cooper's How to Stay Married was first published, she described it as "terribly politically incorrect"?... that wrestler Kurt Howell won all 108 of his matches in high school?... that the second-place candidate in the 2018 Taipei mayoral election lost by just 0.23%, demanded a recount, and ended up losing by even more?ArchiveStart a new articleNominate an articleNgg wa Thiong'oKenyan writer and activist Ngg wa Thiong'o (pictured) dies at the age of 87.In sumo, nosato Daiki is promoted to yokozuna.In association football, Liverpool win the Premier League title.In motor racing, lex Palou wins the Indianapolis 500.Ongoing: Gaza warM23 campaignRussian invasion of UkrainetimelineSudanese civil wartimelineRecent deaths: Phil RobertsonMary K. GaillardPeter DavidAlan YentobGerry ConnollySebastio SalgadoNominate an articleMay 29: Feast day of Saint PaulVI (Catholicism)Headline in the New York Times1233 MongolJin War: The Mongols entered and began looting Kaifeng, the capital of the Jin dynasty of China, after a 13-month siege.1416 A squadron of the Venetian navy captured many Ottoman ships at the Battle of Gallipoli, confirming Venetian naval superiority in the Aegean Sea for the next few decades.1913 During the premiere of the ballet Le Sacre du printemps by Igor Stravinsky at the Thtre des Champs-lyses in Paris, the avant-garde nature of the music and choreography caused a near-riot in the audience (report pictured).1999 Charlotte Perrelli, representing Sweden, won the Eurovision Song Contest, the first edition not to feature an orchestra or live accompaniment.2011 Residents of Portland, Oregon, held a rally called Hands Across Hawthorne in response to an attack against a gay couple holding hands while crossing the Hawthorne Bridge.Benedetto Pistrucci (b.1783)G.K. Chesterton (b.1874)Hubert Opperman (b.1904)Uro Drenovi (d.1944)More anniversaries: May 28May 29May 30ArchiveBy emailList of days of the yearAboutThe Australian white ibis (Threskiornis molucca) is a wading bird of the ibis family, Threskiornithidae. It is widespread across much of Australia, and has a predominantly white plumage with a bare, black head, long downcurved bill, and black legs. While it is closely related to the African sacred ibis, the Australian white ibis is a native Australian bird. Due to its increasing presence in the urban environment and its habit of rummaging in garbage, the species has acquired a variety of colloquial names such as "tip turkey" and "bin chicken". This Australian white ibis was photographed at the Royal Botanic Garden, Sydney.Photograph credit: Charles J. SharpRecently featured: Hell Gate BridgeAnemonoides blandaBluespotted ribbontail rayArchiveMore 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 nynorskShqipSlovenina Retrieved from " 2Calendar yearYearsMillennium2ndmillenniumCenturies12thcentury13thcentury 14thcenturyDecades1210s1220s1230s 1240s1250sYears1230123112321233 123412351236vte1233 by topicLeadersPolitical entitiesState leadersReligious leadersBirth and death categoriesBirths DeathsEstablishments and disestablishments categoriesEstablishments DisestablishmentsArt and literature1233 in poetryvte1233 in various calendarsGregorian calendar1233MCCXXXIIIAb urbe condita1986Armenian calendar682 Assyrian calendar5983Balinese saka calendar11541155Bengali calendar639640Berber calendar2183English Regnal year17Hen.318Hen.3Buddhist calendar1777Burmese calendar595Byzantine calendar67416742Chinese calendar (WaterDragon)3930 or 3723to (WaterSnake)3931 or 3724Coptic calendar949950Discordian calendar2399Ethiopian calendar12251226Hebrew calendar49934994Hindu calendars- Vikram Samvat12891290- Shaka Samvat11541155- Kali Yuga43334334Holocene calendar11233Igbo calendar233234Iranian calendar611612Islamic calendar630631Japanese calendarJei 2 / Tenpuku 1()Javanese calendar11421143Julian calendar1233MCCXXXIIIKorean calendar3566Minguo calendar679 before ROC679Nanakshahi calendar235Thai solar calendar17751776Tibetan calendar(male Water-Dragon)1359 or 978 or 206to(female Water-Snake)1360 or 979 or 207 Henry I of Cyprus receives a messageYear 1233 (MCCXXXIII) was a common year starting on Saturday of the Julian calendar.War of the Lombards: Lombard forces at Kyrenia surrender to John of Beirut, after a 10-month siege. The defenders, with their personal belongings, are allowed to retire to Tyre. Captured prisoners are exchanged for those held by Richard Filangieri, commander of the Lombards, at Tyre. Cyprus is wholly restored under the rule of the 16-year-old King Henry I ("the Fat"). His vassals are rewarded, and loans that they have made are repaid.[1]August 20 Oath of Bereg: King Andrew II of Hungary vows to the Holy See that he will not employ Jews and Muslims to administer royal revenues, which causes diplomatic complaints and ecclesiastical censures.[2]Winter Reconquista: King Ferdinand III of Castile ("the Saint") conquers the cities of Trujillo and beda. The Castilian army besieges the city of Peniscola. Ferdinand forces Ibn Hud, ruler of the Taifa of Zaragoza, to sign a truce.[3]August Richard Marshal, 3rd Earl of Pembroke, signs an alliance with Llywelyn the Great, to join forces to revolt against King Henry III. Richard is faced by demands from royal bailiffs in September where the garrison of Usk Castle is forced to surrender.November Henry III's army camped at Grosmont Castle is attacked in the night, by a force of Welsh and English rebels. Several of Henry's supporters are captured, and the castle is returned to Hubert de Burgh, one of the rebels.May 29 MongolJin War: The Mongol army led by gedei Khan captures Kaifeng, capital of the Jin dynasty ('Great Jin'), after the 13-month Siege of Kaifeng (1232). The Mongols plunder the city, while Emperor Aizong of Jin flees for the town of Caizhou. Meanwhile, gedei departs and leaves the final conquest to his favoured general, Subutai.December Siege of Caizhou: The Mongols under gedei Khan besiege Caizhou and ally themselves with the Chinese Song dynasty to eliminate the Jin Dynasty.Gendt receives its city rights from Otto II ("the Lame"), count of Guelders (modern Netherlands).Pope Gregory IX establishes the Papal Inquisition, to regularize the persecution of heresy.June/July Ibn Manzur, Arab lexicographer and writer (d. 1312)August 15 Philip Benizi de Damiani, Italian religious leader (d. 1285)October Al-Nawawi, Syrian scholar, jurist and writer (d. 1277)Adelaide of Burgundy, duchess of Brabant (d. 1273)Choe Ui, Korean military leader and dictator (d. 1258)Ibn al-Quff, Ayyubid physician and surgeon (d. 1286)Sancho of Castile, archbishop of Toledo (d. 1261)January 6 Matilda of Chester, Countess of Huntingdon (or Maud), English noblewoman (b. 1171)January 18 Yang (or Gongsheng), Chinese empress (b. 1162)February 12 Ermengarde de Beaumont, queen of ScotlandMarch 1 Thomas I (or Tommaso), count of Savoy (b. 1178)May Simon of Joinville, French nobleman and knight (b. 1175)June Yolanda de Courtenay, queen consort of HungaryJuly 8 Konoe Motomichi, Japanese nobleman (b. 1160)July 26 Wilbrand of Oldenburg, prince-bishop of UtrechtJuly 27 Ferdinand (or Ferrand), count of Flanders (b. 1188)July 29 Savari de Maulon, French nobleman (b. 1181)July 30 Konrad von Marburg, German priest (b. 1180)October 8 Ugo Canefri, Italian health worker (b. 1148)October 22 Fujiwara no Shunshi, Japanese empress consort (b. 1209)November 22 Helena, duchess of Brunswick-LneburgNovember 27 Shi Miyuan, Chinese politician (b. 1164)Ibn al-Athir, Seljuk historian and biographer (b. 1160)Bertran de Born lo Filhs, French troubadour (b. 1179)Bohemond IV ("the One-Eyed"), prince of Antioch (b. 1175)Gkbri ("Blue-Wolf"), Ayyubid general and ruler (b. 1154)Guilln Prez de Guzmn, Spanish nobleman (b. 1180)John Apokaukos, Byzantine bishop and theologianMathilde of Angoulme, French noblewoman (b. 1181)Sayf al-Din al-Amidi, Ayyubid scholar and jurist (b. 1156)William Comyn, Scoto-Norman nobleman (b. 1163)^ Steven Runciman (1952). A History of The Crusades. Vol III: The Kingdom of Acre, pp. 169170. ISBN978-0-241-29877-0.^ Berend, Nora (2001). At the Gate of Christendom: Jews, Muslims and "Pagans" in Medieval Hungary, c. 1000-c.1300. Cambridge University Press. p.158. ISBN978-0-521-02720-5.^ Lourie, Elena (2004). Jews, Muslims, and Christians in and around the Crown of Aragon: essays in honour of Professor Elena Lourie. Brill. p.270. ISBN90-04-12951-0.[permanent dead link]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.The 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.1111: 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.A 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).The 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.Averroes 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.1150: 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.The 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.The 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.1180: 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 end of the Polonnaruwa-Pagan War.1182: Revolt of the people of Constantinople against the Latins, whom they massacre, proclaiming Andronicus I Comnenus as co-emperor.1183: On January 25, the final Peace of Constance between Frederick Barbarossa, the pope and the Lombard towns is signed, confirming the Peace of Venice of 1177.1183: On September 24, Andronicus I Comnenus has his nephew Alexius II Comnenus strangled.1184: On March 24, Queen Tamar, King of Georgia, accedes to the throne as sole ruler after reigning with her father, George III, for six years.1184: Diet of Pentecost organised by Emperor Frederick I in Mainz.1185: The Uprising of Asen and Peter against the Byzantine Empire leads to the restoration of the Bulgarian Empire.1185: Andronicus I Comnenus is deposed and, on September 12, executed as a result of the Norman massacre of the Greeks of Thessalonika.1185: The cathedral school (Katedralskolan) in Lund, Sweden, is founded. The school is the oldest in northern Europe and one of the oldest in all of Europe.1185: Beginning in this year the Kamakura shogunate deprives the emperor of Japan of political power.1186: On January 27, the future Holy Roman Emperor Henry VI marries Constance of Sicily, the heiress to the Sicilian throne.1187: On July 4, in the Battle of Hattin, Saladin defeats the king of Jerusalem.1187: In August, the Swedish royal and commercial center Sigtuna is attacked by raiders from Karelia, Couronia, and/or Estonia.[3]1188: The Riah were introduced into the Habt and south of Tetouan by the Almohad caliph, Abu Yusuf Yaqub al-Mansur, and Jochem and Acem were introduced in Tamesna.[4]1189: On September 3, Richard I is crowned King of England at Westminster.1189: On November 11, William II of Sicily dies and is succeeded by his illegitimate cousin Tancred, Count of Lecce instead of Constance.11891192: The Third Crusade is an attempt by European leaders to wrest the Holy Land from Saladin.Richard I of England, or Richard the Lionheart.1190: On June 10, Emperor Frederick Barbarossa drowns in the River Salef, leaving the Crusader army under the command of the rivals Philip II of France and Richard I of England, which ultimately leads to the dissolution of the army.1191: Holy Roman Emperor Henry VI attacked the Kingdom of Sicily from May to August but fails and withdrawn, with Empress Constance captured (released 1192).1191: On September 7, Saladin is defeated by Richard I of England at the Battle of Arsuf.1192: In April, Isabella I begins her reign as Christian Queen of the Kingdom of Jerusalem1192: In the Battle of Jaffa, King Richard the Lionheart defeats Saladin.1192: In June, the Treaty of Ramla is signed by Saladin and Richard Lionheart. Under the terms of the agreement, Jerusalem will remain under Muslim control. However, the city will be open to Christian pilgrims. The Latin Kingdom is reduced to a coastal strip that extends from Tyre to Jaffa.1192: Minamoto no Yoritomo is appointed Sei-i Taishgun, "barbarian-subduing great general", shgun for short, the first military dictator to bear this title.1192: Sultan Shahbuddin Muhammad Ghori establishes the first Muslim empire in India for 14 years (11921206) by defeating Prithviraj Chauhan.1193: Nalanda, the great Indian Buddhist educational centre, is destroyed.1194: Emperor Henry VI conquers the Kingdom of Sicily.1195: On June 16, the struggle of Shamqori. Georgian forces annihilate the army of Abu Baqar.1198: The brethren of the Crusader hospital in Acre are raised to a military order of knights, the Teutonic Knights, formally known as the Order of the Knights of the Hospital of St. Mary of the Teutons in Jerusalem.1199: Pope Innocent III writes to Kaloyan, inviting him to unite the Bulgarian Church with the Roman Catholic Church.1200: Construction begins on the Grand Village of the Natchez near Natchez, Mississippi. This ceremonial center for the Natchez people is occupied and built until the early 17th century.[5]Eastern Hemisphere at the end of the 12th centuryChina is under the Northern Song dynasty. Early in the century, Zhang Zeduan paints Along the River During the Qingming Festival. It will later end up in the Palace Museum, Beijing.In southeast Asia, there is conflict between the Khmer Empire and the Champa. Angkor Wat is built under the Hindu king Suryavarman II. By the end of the century, the Buddhist Jayavarman VII becomes the ruler.Japan is in its Heian period. The Chj-jinbutsu-giga is made and attributed to Toba Sj. It ends up at the Kzan-ji, Kyoto.In Oceania, the Tui Tonga Empire expands to a much greater area.Europe undergoes the Renaissance of the 12th century. The blast furnace for the smelting of cast iron is imported from China, appearing around Lapphyttan, Sweden, as early as 1150.Alexander Neckam is the first European to document the mariner's compass, first documented by Shen Kuo during the previous century.Christian humanism becomes a self-conscious philosophical tendency in Europe. Christianity is also introduced to Estonia, Finland, and Karelia.The first medieval universities are founded. Pierre Abelard teaches.Middle English begins to develop, and literacy begins to spread outside the Church throughout Europe.[6] In addition, churchmen are increasingly willing to take on secular roles. By the end of the century, at least a third of England's bishops also act as royal judges in secular matters.[7]The Ars antiqua period in the history of the medieval music of Western Europe begins.The earliest recorded miracle play is performed in Dunstable, England.Gothic architecture and trouvre music begin in France.During the middle of the century, the Cappella Palatina is built in Palermo, Sicily, and the Madrid Skylitzes manuscript illustrates the Synopsis of Histories by John Skylitzes.Fire and plague insurance first become available in Iceland, and the first documented outbreaks of influenza there happens.The medieval state of Serbia is formed by Stefan Nemanja and then continued by the Nemanji dynasty.By the end of the century, both the Capetian dynasty and the House of Anjou are relying primarily on mercenaries in their militaries. Paid soldiers are available year-round, unlike knights who expected certain periods off to maintain their manor lifestyles.[8]In India, Hoysala architecture reaches its peak.In the Middle East, the icon of Theotokos of Vladimir is painted probably in Constantinople. Everything but the faces will later be retouched, and the icon will go to the Tretyakov Gallery of Moscow.The Georgian poet Shota Rustaveli composes his epic poem The Knight in the Panther's Skin.Shahab al-Din Suhrawardi founds his "school of illumination".In North Africa, the kasbah of Marrakesh is built, including the city gate Bab Agnaou and the Koutoubia mosque.In sub-Saharan Africa, Kente cloth is first woven.In France, the first piedfort coins were minted.The city of Tula burns down, marking the end of the Toltec EmpireIn West Africa the Ife Empire is established.See also: Timeline of historic inventions 12th century1104: The Venice Arsenal of Venice, Italy, is founded. It employed some 16,000 people for the mass production of sailing ships in large assembly lines, hundreds of years before the Industrial Revolution.1106: Finished building of Gelati.1107: The Chinese engineer Wu Deren combines the mechanical compass vehicle of the south-pointing chariot with the distance-measuring odometer device.1111: The Chinese Donglin Academy is founded.1165: The Liuhe Pagoda of Hangzhou, China, is built.1170: The Roman Catholic notion of Purgatory is defined.[9]1185: First record of windmills.Wikimedia Commons has media related to 12th century.^ Soekmono, R, Drs., Pengantar Sejarah Kebudayaan Indonesia 2, 2nd ed. Penerbit Kanisius, Yogyakarta, 1973, 5th reprint edition in 1988 p.57^ Britannica, T. Editors of Encyclopaedia (1998, July 20). Kairi. Encyclopedia Britannica.^ Enn Tarvel (2007). Sigtuna hukkumine. Archived 2017-10-11 at the Wayback Machine Haridus, 2007 (7-8), p 3841^ Notice sur les Arabes hilaliens. Ismal Hamet. p.248.^ Francine Weiss and Mark R. 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ISBN9780520036437. {{cite book}}: ISBN / Date incompatibility (help)Retrieved from " 4The following pages link to 12th century External tools(link counttransclusion countsorted list) See help page for transcluding these entriesShowing 50 items.View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)Antisemitism in Christianity (links | edit)Catharism (links | edit)List of decades, centuries, and millennia (links | edit)Dialect (links | edit)House of Habsburg (links | edit)House of Hohenzollern (links | edit)History of Mali (links | edit)Maimonides (links | edit)Passport (links | edit)Sumba (links | edit)Taoism (links | edit)Weregild (links | edit)Zanzibar (links | edit)20th century (links | edit)1040 (links | edit)15th century (links | edit)16th century (links | edit)17th century (links | edit)18th century (links | edit)14th century (links | edit)1st century (links | edit)13th century (links | edit)4th century (links | edit)11th century (links | edit)1282 (links | edit)7th century (links | edit)10th century (links | edit)9th century (links | edit)8th century (links | edit)6th century (links | edit)5th century (links | edit)3rd century (links | edit)2nd century (links | edit)4th century BC (links | edit)1st century BC (links | edit)2nd century BC (links | edit)3rd century BC (links | edit)5th century BC (links | edit)6th century BC (links | edit)21st century BC (links | edit)11th century BC (links | edit)1000s (decade) (links | edit)1040s (links | edit)1299 (links | edit)1154 (links | edit)1163 (links | edit)1160s (links | edit)1141 (links | edit)1135 (links | edit)1204 (links | edit)View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)Retrieved from " WhatLinksHere/12th_century" Share copy and redistribute the material in any medium or format for any purpose, even commercially. 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For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. The area of a triangle is defined as the total space occupied by the three sides of a triangle in a 2-dimensional plane. The basic formula for the area of a triangle is equal to half the product of its base and height, i.e., A = 1/2 b h. This formula is applicable to all types of triangles, whether it is a scalene triangle, an isosceles triangle, or an equilateral triangle. It should be remembered that the base and the height of a triangle are perpendicular to each other. In this lesson, we will learn the area of triangle formulas for different types of triangles, along with some examples. What is the Area of a Triangle? The area of a triangle is the region enclosed within the sides of the triangle. The area of a triangle varies from one triangle to another depending on the length of the sides and the internal angles. The area of a triangle is expressed in square units, like, m2, cm2, in2, and so on. Triangle Definition A triangle is a closed figure with 3 angles, 3 sides, and 3 vertices. It is one of the most basic shapes in geometry and is denoted by the symbol . There are different types of triangles in math that are classified on the basis of their sides and angles. Area of Triangle Formula The area of a triangle can be calculated using various formulas. For example, Herons formula is used to calculate the triangles area, when we know the length of all three sides. Trigonometric functions are also used to find the area of a triangle when we know two sides and the angle formed between them. However, the basic formula that is used to find the area of a triangle is: Area of triangle = 1/2 base height Observe the following figure to see the base and height of a triangle. Let us find the area of a triangle using this formula. Example: What is the area of a triangle with base 'b' = 2 cm and height 'h' = 4 cm? Solution: Using the formula: Area of a Triangle, A = 1/2 b h = 1/2 4 2 = 4 cm2 Triangles can be classified based on their angles as acute, obtuse, or right triangles. They can be scalene, isosceles, or equilateral triangles when classified based on their sides. Let us learn about the other ways that are used to find the area of triangles with different scenarios and parameters. Area of Triangle Using Heron's Formula Heron's formula is used to find the area of a triangle when the length of the 3 sides of the triangle is known. To use this formula, we need to know the perimeter of the triangle which is the distance covered around the triangle and is calculated by adding the length of all three sides. Herons formula has two important steps. Step 1: Find the semi perimeter (half perimeter) of the given triangle by adding all three sides and dividing it by 2. Step 2: Apply the value of the semi-perimeter of the triangle in the main formula called 'Herons Formula'. Consider the triangle ABC with side lengths a, b, and c. To find the area of the triangle we use Heron's formula: Area = \(\sqrt {s(s - a)(s - b)(s - c)}\) Note that (a + b + c) is the perimeter of the triangle. Therefore, 's' is the semi-perimeter which is: (a + b + c)/2 Area of Triangle With 2 Sides and Included Angle (SAS) When two sides and the included angle of a triangle are given, we use a formula that has three variations according to the given dimensions. For example, consider the triangle given below. When sides 'b' and 'c' and included angle A is known, the area of the triangle is: Area (ABC) = 1/2 bc sin(A) When sides 'a' and 'b' and included angle C is known, the area of the triangle is: Area (ABC) = 1/2 ab sin(C) When sides 'a' and 'c' and included angle B is known, the area of the triangle is: Area (ABC) = 1/2 ac sin(B) Example: In ABC, angle A = 30, side 'b' = 4 units, side 'c' = 6 units. Area (ABC) = 1/2 bc sin A = 1/2 4 6 sin 30 = 12 1/2 (since sin 30 = 1/2) Area = 6 square units. How to Find the Area of a Triangle? The area of a triangle can be calculated using various formulas depending upon the type of triangle and the given dimensions. Area of Triangle Formulas The area of triangle formulas for all the different types of triangles like the equilateral triangle, right-angled triangle, and isosceles triangle are given below. Area of a Right-Angled Triangle A right-angled triangle, also called a right triangle, has one angle equal to 90 and the other two acute angles sum up to 90. Therefore, the height of the triangle is the length of the perpendicular side. The formula that is used in this case is: Area of a Right Triangle = A = 1/2 Base Height Area of an Equilateral Triangle An equilateral triangle is a triangle where all the sides are equal. The perpendicular drawn from the vertex of the triangle to the base divides the base into two equal parts. To calculate the area of the equilateral triangle, we need to know the measurement of its sides. The formula that is used in this case is: Area of an Equilateral Triangle = A = (3)/4 side2 Area of an Isosceles Triangle An isosceles triangle has two of its sides equal and the angles opposite the equal sides are also equal. The formula that is used in this case is: Area of an Isosceles Triangle = A = \(\frac{1}{4}b\sqrt {4{a^2} - {b^2}}\) where 'b' is the base and 'a' is the measure of one of the equal sides. Area of Triangle when 3 Sides are Given The area of a triangle can be calculated when 3 sides are given. In this scenario, we assume that all the 3 sides of the triangle are of different lengths. In other words, this is a scalene triangle and we use the Heron's formula to find the area of the triangle. The Heron's formula is explained above on this page and is expressed as follows: Area of triangle = \(\sqrt {s(s - a)(s - b)(s - c)}\) where a, b, and c are the sides of the triangle and 's' is the semi-perimeter; s = (a + b + c)/2. Observe the table given below which summarizes all the formulas for the area of a triangle. Given Dimensions Area of Triangle Formula When the base and height of a triangle are given. A = 1/2 (base height) When the sides of a triangle are given as a, b, and c. (Heron's formula) Area of a scalene triangle = \(\sqrt {s(s - a)(s - b)(s - c)}\) where a, b, and c are the sides and 's' is the semi-perimeter; s = (a + b + c)/2 When two sides and the included angle is given. A = 1/2 side 1 side 2 sin() where is the angle between the given two sides When base and height is given. Area of a right-angled triangle = 1/2 Base Height When it is an equilateral triangle and one side is given. Area of an equilateral triangle = (3)/4 side2 When it is an isosceles triangle and an equal side and base is given. Area of an isosceles triangle = 1/4 b\(\sqrt {4{a^2} - {b^2}}\) where 'b' is the base and 'a' is the length of an equal side. Related Articles Cuemath is one of the world's leading math learning platforms that offers LIVE 1-to-1 online math classes for grades K-12. Our mission is to transform the way children learn math, to help them excel in school and competitive exams. Our expert tutors conduct 2 or more live classes per week, at a pace that matches the child's learning needs. Example 1: Find the area of a triangle with a base of 10 inches and a height of 5 inches. Solution: Let us find the area using the area of triangle formula: Area of triangle = (1/2) b h A = 1/2 10 5 A = 1/2 50 Therefore, the area of the triangle (A) = 25 in2 Example 2: Find the area of an equilateral triangle with a side of 2 cm. Solution: We can calculate the area of an equilateral triangle using the area of triangle formula, Area of an equilateral triangle = (3)/4 side2 where 'a' is the length of one equal side. On substituting the values, we get, Area of an equilateral triangle = (3)/4 22 Area = 1.73 cm2 Example 3: Find the area of a triangle with a base of 8 cm and a height of 7 cm. Solution: Area of triangle = (1/2) b h A = 1/2 8 7 A = 1/2 56 A = 28 cm2 Show More > go to slidego to slidego to slide Great learning in high school using simple cues Indulging in rote learning, you are likely to forget concepts. With Cuemath, you will learn visually and be surprised by the outcomes. Book a Free Trial Class FAQs on Area Of Triangle The area of a triangle is the space enclosed within the three sides of a triangle. It is calculated with the help of various formulas depending on the type of triangle and is expressed in square units like, cm2, inches2, and so on. What is the Area of Triangle Formula? The basic formula to find the area of a triangle is, area of triangle = 1/2 (b h); where 'b' is the base and 'h' is the height of the triangle. However, there are other formulas that are used to find the area of a triangle which depend upon the type of triangle and the known dimensions. How to Find the Area of a Triangle? The area of a triangle can be calculated if the base and height of the triangle is given. The basic formula that is used to calculate the area is, Area of triangle = 1/2 (base height). In other scenarios, when other parameters are known, the following formulas are used to find the area of a triangle: Area of a scalene triangle = \(\sqrt {s(s - a)(s - b)(s - c)}\); where a, b, and c are the sides and 's' is the semi-perimeter; s = (a + b + c)/2 Area of triangle = 1/2 side 1 side 2 sin(); when 2 sides and the included angle is known, where is the angle between the given two sides. Area of an equilateral triangle = (3)/4 side2 Area of an isosceles triangle = 1/4 b\(\sqrt {4{a^2} - {b^2}}\); where 'b' is the base and 'a' is the length of an equal side. How to Find the Base and Height of a Triangle? The area of the triangle is calculated with the formula: A = 1/2 (base height). Using the same formula, the height or the base can be calculated when the other dimensions are known. For example, if the area and the base of the triangle is known then the height can be calculated as, Height of the triangle = (2 Area)/base. Similarly, when the height and the area is known, the base can be calculated with the formula, Base of the triangle = (2 Area)/height How to Find the Area and Perimeter of a Triangle? The area of a triangle can be calculated with the help of the formula: A = 1/2 (b h). The perimeter of a triangle can be calculated by adding the lengths of all the three sides of the triangle. How to Find the Area of a Triangle Without Height? The area of a triangle can be calculated when only the length of the 3 sides of the triangle are known and the height is not given. In this case, the Heron's formula can be used to find the area of the triangle. Heron's formula: A = \(\sqrt {s(s - b)(s - b)(s - c)}\) where a, b, and c are the sides of the triangle and 's' is the semi-perimeter; s = (a + b + c)/2. How to Find the Area of Triangle with Two Sides and an Included Angle? In a triangle, when two sides and the included angle is given, then the area of the triangle is half the product of the two sides and sine of the included angle. For example, In ABC, when sides 'b' and 'c' and included angle A is known, the area of the triangle is calculated with the help of the formula: 1/2 b c sin(A). For a detailed explanation refer to the section, 'Area of Triangle With 2 Sides and Included Angle (SAS)', given on this page. How to Find the Area of a Triangle with 3 Sides? The area of a triangle with 3 sides can be calculated using Heron's formula. Heron's formula: A = \(\sqrt {s(s - a)(s - b)(s - c)}\) where a, b, and c are the sides of the triangle and 's' is the semi-perimeter; s = (a + b + c)/2. What is the Formula to Calculate the Area of a Triangle? The formula for the area of a triangle depends on the dimensions that are known and also on the type of the triangle. There are different formulas for different types of triangles given above on this page in detail. A few of them are listed below. Area of a scalene triangle = \(\sqrt {s(s - a)(s - b)(s - c)}\); where a, b, and c are the sides and 's' is the semi-perimeter; s = (a + b + c)/2 Area of an equilateral triangle = (3)/4 side2 Area of an isosceles triangle = 1/4 b\(\sqrt {4{a^2} - {b^2}}\); where 'b' is the base and 'a' is the length of an equal side. The Triangle area calculator aka sss triangle calculator helps you to calculate the area of a triangle. Not only area but the area of a triangle calculator also gives you the liberty to solve the triangular equation for any value such as: Base b Area A Sides Gamma ParameterIn the post below, you willlearn how to find the area of a triangle, how to calculate the length of a triangle, and the formula for the area of a triangle.By using this right-angle triangle calculator, find the area, base, or height of a triangle. You can calculate the centroid of a triangle using our centroid triangle calculator.What is a Triangle?According to WikipediaA triangle is a polygon with three edges and three vertices. It is one of the basic shapes in geometry. A triangle with vertices A, B, and C is denoted by ABC.It further states that:In Euclidean geometry any three points, when non-collinear, determine a unique triangle and simultaneously, a unique plane.In the belowdiagram, A, B, and C are the edges while a, b, and c are the vertices of triangle ABC.There are several types of triangles and some of those are: Equilateral Isosceles Right-angled triangle Scalene ObtuseFormulas of Triangle CalculatorHere is a list of various methods to find the area of a triangle using different equations. When base and height are knownIf the base b and height h of the triangle are given, its area can be calculated by using the following formula:Area of triangle = b h When three sides are known (SSS)You can use Herons formula if all three sides of a triangle are known.Area = 0.25 ((a + b + c) (-a + b + c) (a - b + c) (a + b - c)) When two sides and an angle are known (SAS)When two sides of a triangle and the angle between them is known, Use the following equation to find the area,Area = 0.5 a b sin () When two angles and a side are known (ASA)If two angles and a line between them are known, the area of a triangle can be calculated using the above 45 45 90 triangle calculator or the below equation.Area = a sin () sin () / (2 sin ( + ))Note: The above equations contain several trigonometric values. You can use our scientific calculator to evaluate trigonometric values.How to Find the Area of a Triangle?You can use this area of a triangle calculator for auto calculation with steps, or you can do it manually too. To find the area of atriangle, follow the below steps: Identify and write down the given values. Write down the triangle area formula. Substitute the given values and calculate the area.Example:Findthe area of a triangle having a base of 5 cm and a height of 9 cm.Solution:Step 1: Identify and write down the given values.b = 5 cm, h = 9 cmStep 2: Write down the triangle area formula.Area of triangle = b hStep 3: Substitute the given values and calculate the area.Area of triangle = 5 9Area of triangle = 22.5 cm2So, the area of this triangleis 22.5 cm2.You can find the area, base, height, missing side of a triangle, and perimeter of a triangle without manual calculation by using our triangle area calculator. It is a complete triangle calculator, which gives you step-by-step solutions and graph to clearly understand the process of each step. if you are confused to find any missing side or perimeter of a triangle with or without a formula, this free calculator is a perfect choice for you.

**A triangle has an area of 38.4 cm2. The area of a triangle is 480 cm2. How to work out area of a triangle in cm2. The area of a triangle is 150 cm2. Area of a triangle in cm. How to find the area of a triangle cm2. How to work out cm2 of a triangle.**