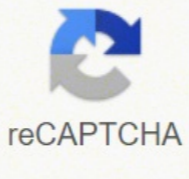
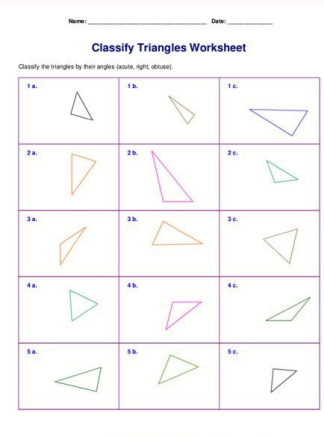




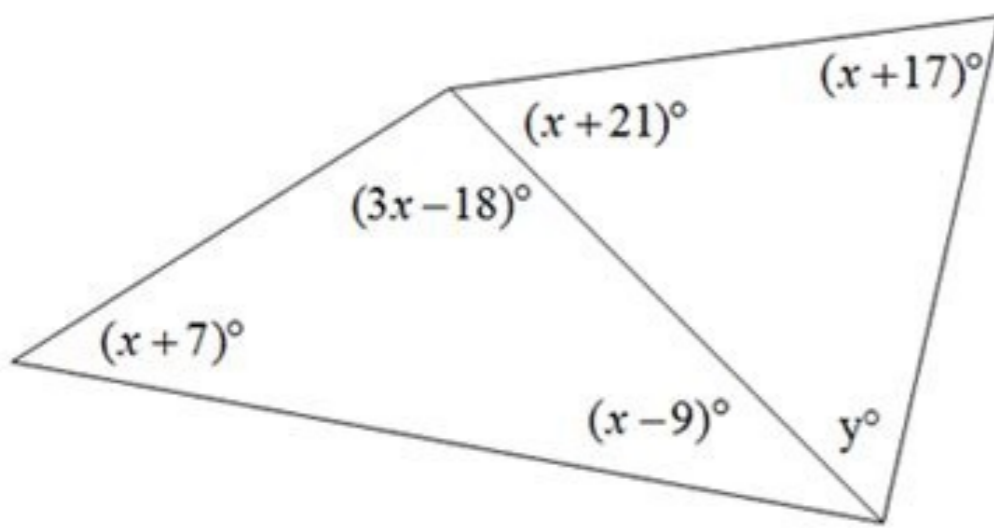
I'm not robot



Open



15. Determine the values of the unknown variables.



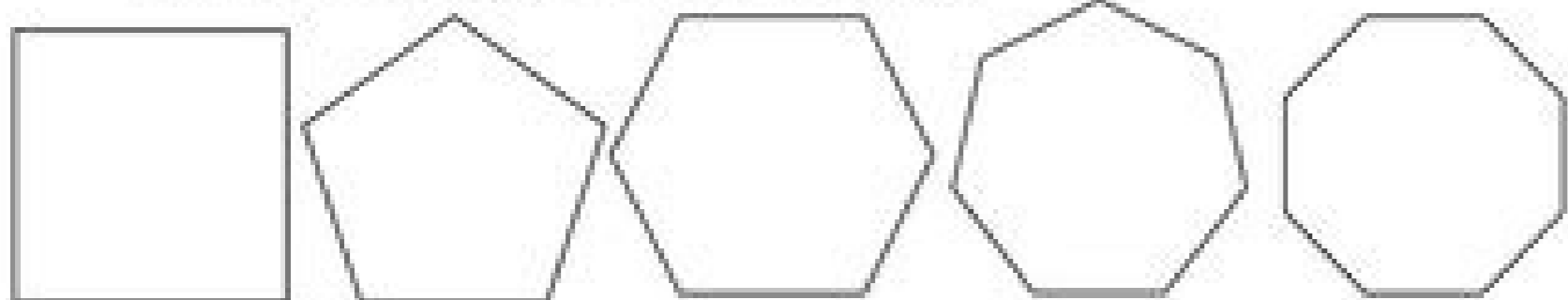
**PROBLEM SOLVING WITH POLYGONS**

Use what you know about interior and exterior angles of polygons to solve the problems below.

Find the value of $a$ .	Find the value of $a$ .	Find $m\angle C$ .
Find $m\angle C$ .	Find the value of $a$ .	Find the value of $a$ .
A regular polygon is partially covered by a rectangle. How many sides does the polygon have?	Find the values of the variables.	Find the measure of the exterior angle formed by a regular hexagon and a regular quadrilateral.
$\triangle ABC$ and $\triangle DEF$ are congruent regular triangles with corresponding sides parallel. Find the value of $a$ .	What is the measure of one interior angle of a regular polygon with 20 sides?	What is the sum of the exterior angles of a convex heptagon?
	What is the sum of the exterior angles of a regular polygon with 20 sides?	What is the measure of one exterior angle of a regular heptagon?

## Regular Polygons

1. Find the size of each exterior angle in these regular polygons



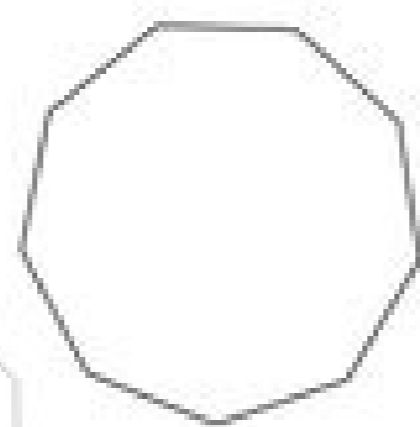
2. Which regular polygons have exterior angles with the following size?

- a.  $24^\circ$     b.  $120^\circ$     c.  $36^\circ$     d.  $15^\circ$     e.  $20^\circ$     f.  $40^\circ$

3. Calculate the interior angles of the shapes drawn in question 1.

4. To the right is a regular polygon with 9 sides.

- a) Work out the size of an exterior angle.  
b) Work out the size of an interior angle



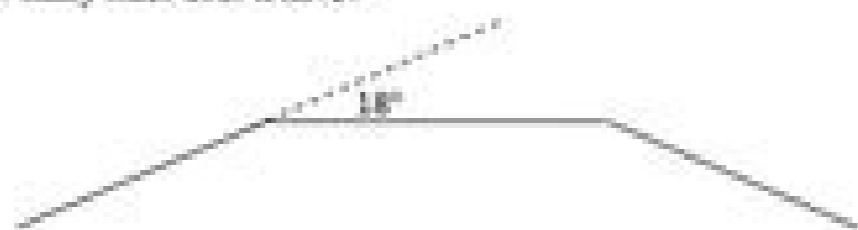
5.

The diagram shows a regular octagon.

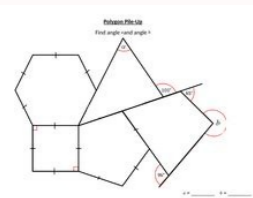
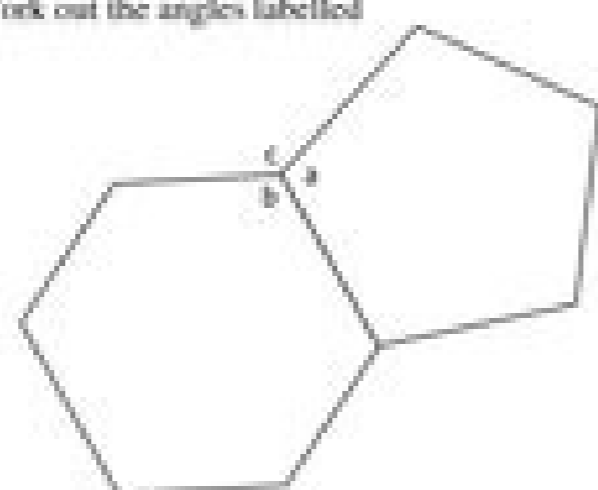
Work out the size of the angle marked  $x$ .



6. Here is the vertex of a regular polygon. How many sides does it have?



7. The diagram shows a regular hexagon joined to a regular pentagon. Work out the angles labelled a, b and c.



sonogĀloP sol ed sedadeiporp sal ravired y .sonogĀloP reiuqlauc ne olugnĵĀ ed amus al rasu y ricuded arap olugnĵĀirt nu arap seroiiretni solugnĵĀ ed amus al ralucaĻsonogĀloP sol ed sedadeiporp sal y roiretni olugnĵĀ led sedadeiporp sal y serbmon soĻ ,olpmeje rop .aArtemoeg al arap selanoicm sĵovos: sonimrĉĀi razintu .omĵAc odidnarpĵ ah arohĀ Ĵ( 02 = n Ĵ( 063 = n61 ĴodaenilĀ { omertxe \ 063-n081 = & n261 \ 081 secev \ 2-nĴ = & n261 ĴodaenilĀ { eceimeoc \ Ĵ { Ĵroditipressucrie \ Ĵ ^ 261 = roiretni olugnĵĀ n Ĵ( 81 = 1 secev \ 61 261 = 9 secev \ 61 81 = 01 VID \ 081 1-9 nitaR ne } cric \ Ĵ ^ 081 } sotnup 4( ĴCRIC \ Ĵ ^ 0621 ed se ozahcer on nu ne seroiiretni solugnĵĀ ed amus al. sacĴĴAmetaM ed seroitut sottrepx rop sadagernte ESCG sacĴĴAmetaM ed nĴĀsiver ed senoiccel sal ed anu a anu ed aenĀ ne etnemlanameS .sodal 9 eneit onogĀloP lE \ Ĵ }denilĀ { dne \ n = & 9 \ n 04 \ n = & 9 \ n 04 = & 063 \ 063-N 081 = & N 041 \ 081 secev \ 2-nĴ = & N 041 ĴodaenilĀ nazneimeoc \ \ sotnĀ of rop Ĵ .1 :9 nĴĀcroppor al ne nĴĀtse raluger onogĀloP nu ed seroiiretxe y seroiiretni solugnĵĀ soĻ .2 \ Ĵ( 811 = 206-027 \ Ĵ( 206 = 261 + 52 + 082 + 55 + 08 \ Ĵ( 027 = 081 secev \ 2-6( }sotnup 3( .odad s / onogĀloP reiuqlauc arap seroiiretni solugnĵĀ ed amus al artneucnE .X omoc odateuqite etnatĀf olugnĵĀ le rartnocnE .raluger onogĀloP adac eneit euq sodal ed oremĴĀn le eluclaC .a olugnĵĀ led oĴĀamat le rautcA )a( .odalipocer ah ay euq nĴĀicamrofni al odnazilitu amelbrop le evleuser .odal nu nartseum son olos ednod seraluger sonogĀloP sol ed sodal ed oremĴĀn lE .sotnj sednarg sĴĀm sonogĀloP sert sol odnacoloc odamrof oretĴĀtiuge olugnĵĀirt nu se CBA .sonogĀloP sol ed sodal sodot nĴĀtse AC y CB .BA euq sol ne socitnĉĀdi seraluger sonogĀloP sert ed senoicces sal nartseum es nĴĀicauitnoc A .odartsinmda s / onogĀloP reiuqlauc arap seroiiretni solugnĵĀ ed amus al artneucne raluger amrof al :sodal ed odiconocsed oremĴĀN From the angle of interiors of the regular polygon angles in the forms of parallel lines, they prepare KS4 students for the success of Maths GCSEs with the third spatial learning. Solve the problem using the information you have already collected. We know, since it is a regular polygon, that all the Angles are equal. equal Get more information about our GCSE mathematical review program. Find the angle size x. To solve problems related to internal vertices: Identify the number of sides of any polygon or polygons given in the question and observe whether it is regular or irregular forms. Adice the amount of internal vermers for any polygon or given polygons. Identify what the question asks for. Resolve the problem using the information you have already collected. (5 brands) (10-2) \ Times 180 = 144 (1) 144 \ times 2 = 288 (1) 360 Ā e Ā ĉ 288 = 72 (1) 72 \ div 2 = 36 (1) 3. Find and . Find the angle and that is within one of the interior Angles. Each interior angle shown is 540 5 = 108. \* Now we can calculate and form an equation: \ \ begin {aligned} 108 + 108 + 108 + y & = 360 \\ 324 + y & = 360 \\ y & = 36 \ end {aligned} \ \ Ā angle and equal to 36°. We can write the sum of the indoor Angles such as 140 multiplied by the number of sides or 140n. Coming soon X Get your work sheet for free internal Angles from 20 questions and answers. Identify the number of sides in any polygon / s given in the question. One of the Angles is within the equilateral triangle, so it must be 60 °, and the other two Angles are of the politics that we are trying to find. We will call x: We know that the Angles around a point are added to 360 °. Get your free work sheet from interior Angles from more than 20 questions and answers. 2 Find the sum of indoor Angles for any given polygon. Keep in mind that we know the values of all other Angles. An equilateral triangles has the sum of indoor hangles of 180Ā °. For a regular form all the Angles are of the same size, so I divide 360 by 4 to reach the answer. Therefore all the Angles are 140Ā °. Are the Angles within a polygon formed by two odnariM odnariM. °ĀĀ081 rop solugnĵĀirt ed oremĴĀn le odnacilpĴitum y solugnĵĀirt ne olodnĉĀidvid onogĀloP nu ed seroiiretni solugnĵĀ sol ed amus al raluclac somedoP. °ĀĀ081 a namus es l ĉĀ atcer aenĀ anu namrof roiretxe y roiretni solugnĵĀ soĻ. As we can see there are three Angles around a point. Sum of the indoor Angles of a DECEGON = (10-2) Āf Ā- 180 Sum deĀ, Indoor Angles of a DECGONE = 8 Āf Ā- 180 Sum of Ā, Interior Angles From a decagono = 1440Ā ° 3Itē what the question is asking you to find. We use essential and non-essential cookies to improve the experience on our website. As each polygon shown is a regular pentagon all have equal sums of its internal ventures: sum of internal Angles = (N-2) Āf Ā- 180 Sum of internal Angles for a pentagon = (5-2) Āf Ā- 180 Sum of interior Angles for each pentagon = 540Ā ° identify what the question is asking you to find. How many sides have the polygon? Therefore: \ \ begin {align} 60 + 2 x & = 360 \\ 2 x & = 300 \\ x & = 150 \ end {align} \ \ This means that each inner angle of the normal polygon is 150Ā °. The following diagram shows a regular decagon. We know that the interior Angles of a triangle add up to 180Ā °. Therefore, \ \ begin {align} 108 + y + y & = 180 \\ 28 + 2 y & = 180 \\ 2 y & = 72 \\ y & = 36 \ end {align} \ \ The angle and is equal to 36Ā °. The sum of interior Angles in a quadrilance is 360 ^ ( \ circ ). 6 vd Ā ĉ Ā ĉ Ā ĉ Irregular hexagon Find the sum of indoor Angles for any given polygon. Thus, the sum of indoor Angles is equal to 150 Ā- no 150n: 150n = (N-2) ā- 180 Now we can resolve by N: \ \ Begin {align} 150 N & = (N-2) \ Times 180 \\ 150 N & = 180 N-360 \\ 360 & = 30 n \\ 12 & = n \ end {align} \ \ The polygon has 12 sides, so each polygon shown in the diagram has 12 sides. Sum of indoor Angles = (N-2) Āf Ā- 180 as a decagon has 10 sides: n = 10, so we can replace n = 10 in the formula. We do not know the number of sides of the polygons, so its sum of indoor Angles can be represented by (N-2) Āf Ā- 180. Each of the internal Angles of a regular polygon is 140Ā . Ā °. somasu somasu omĴAc erbos nĴĀicamrofni renetho arap seikoc ed acĴĀloP artseuĀ el rovaf rop .seralugerrĳ o seraluger samrof ed atart es is atneuc ne agneT .atnugerp al ne sodacidni sonogĀloP o onogĀloP reiuqlauc ed sodal ed oremĴĀn le and how to manage or change the configuration of privacy cookies and cookies therefore, we can find the size of each inner angle by dividing the sum of indoor Angles by the number of Angles in the polygon : \ \ text {Each Interior Angle} = \ \ frac {1440} {10} \ \ The size of each inner angle is 144 °. Identify the number of sides in any polygon / s given in the question. We have to find the number of sides. Calculate the tagged angle size. Each polygon has 5 sides (pentagon) and is regular. Find the sum of indoor Angles for any given polygon. Note: We can also solve this problem by calculating an outer angle. GUALE STEP A STEP: SUBSTITUTION The diagram shows a polygon. Do not count the number of sides not to identify whether a polygon is regular or irregular, dividing the sum of indoor verners by the number of triangles created. Includes reasoning and applied questions. An equilateral triangle (regular form) formed by adjacent sides AB, BC and CA is shown. Sum of indoor Angles, = (N-2) Ā- 180 Sum of internal Angles for a hexagon = (6-2) Ā- 180 Sum of internal Angles for a hexagon = 720 ° Identify what the question is asking you to find. Observe if it is regular or irregular forms. Below are three regular congruent pentagons. You find the angle and. As the polygon is regular you can find the size of an inner angle by: 540Ā ° ĀfĀ . 5 = 108 as the polygon is regular AC = AB therefore ABC is a triangle issscoles where The ACP Angles and ABC are equal among themselves and therefore are both and. Identify what the question is asking you to find. For example, the number of triangles in which a polygon can be divided is always 2 less than the number of sides. PrĀ "Ximously find the size of each inner angle for a decagon 081semitĴ2-n( 081semitĴ2-nĴ = seroiiretni solugnĵĀ ed amus. °ĀĀ911 se olugnĵĀ led oĴĀamat lE \ \ ngĴilĀ { dne \ 911 = & x \ 027 = & x + 106 \ 027 = & x + 061 + 031 + 101 + 09-021 \ ngĴilĀ { ngeib \ \ roiretni olugnĵĀ nu ed oĴĀamat le acifingis otsĒ Ā Ā 2-nĴ = seroiiretni solugnĵĀ ed amusS .seralugerrĳ o seraluger samrof ed atart es is evresbO .raluger onogĀtĳnep nu artseum eS .oicēpart nu olpmeje rop dūtignol laugi ed nos on sodal sol sodot o/y oĴĀamat laugi ed nos on solugnĵĀ sol sodot ednod se ralugerrĳ onogĀloP nUodardauc nu .jĒ Ā dūtignol laugi ed nos sodal sol sodot y oĴĀamat laugi ed nos solugnĵĀ sol sodot ednod se raluger onogĀloP nU :seralugerrĳ e seraluger sonogĀloP .satcer saenĀl nos sodal sol sodot ednod .sodal sert sonem la noc lanoinsemidib amrof anu se onogĀloP nU :onogĀloP sonogĀloP ne solugnĵĀ .osap a osp aĀuG onogĀloP le eneit euq sodal ed oremĴĀn le se Ā Ā ĉĀĀn Ā ĉĀ081 Ā 2-nĴ = seroiiretni solugnĵĀ ed amusS :se lareneg alumnĴĀf al \ \ } cric \ { ^ 009 = \ } cric \ { ^ 081 semit 5 \ \ .solugnĵĀirt 5 ne onogĀtĳneh le ridivid somerdrop euq odom ed .5=2-7 .°ĀĀ063 somerndnetbo sotnj y e sodartsom seroiiretni solugnĵĀ sert sol somidaĴĀa is euq ol rop .°ĀĀ063 a namus es otĳnup nu ed rodederia solugnĵĀ sol euq somebaS .atseupser al a ragell arap 9 rop 0621 somidivid euq Āsa .oĴĀamat omsim led nos solugnĵĀ sol sodot raluger amrof anu arapĴ .sodal 7 eneit onogĀtĳneh nu .olpmeje rop Ā .raluger amrof Ā ĉĀ sodal 01 . 081 semit 11 ne etreivnoc es oluĴĴĀc le euq Āsa .31=n osac etse nE 081semitĴ2-nĴ = seroiiretni solugnĵĀ ed amusS atnugerp onogĀloP nu ed acĴĴĀrp al ed seroiiretni solugnĵĀ sol raluclac arap satnugerp sal odneidip nĴĀtse el olugnĵĀ ©Auq etnemaenĴarre odnacifĴinedĴ oĴĀamat omsim led nos solugnĵĀ sol sodot euq etnematcerrocni odneinopuS Ĵselamron sonogĀloP arap olĴĀsĴ roiretni olugnĵĀ nu ed oĴĀamat le rartnocne arap sodal ed oremĴĀn le rop ridivid ebed . } cric \ { ^ 045 namus euq seroiiretni solugnĵĀ eneit onogĀtĳnep nu euq somebaS 081semitĴ2-nĴ = seroiiretni solugnĵĀ ed amusS .alumnĴĀf al odnasU 81=n Āsa 063 = n02 a acĴĴilpmis lauc oL 081semitĴ2-nĴ= n061 somenet .etnem ne otsĒ noĉ 081semitĴ2-nĴ = seroiiretni solugnĵĀ ed amusS 42=n Āsa 063 = n51 a acĴĴilpmis lauc oL 081 semit 2-nĴ=n561 somenet .etnem ne otsĒ atnugerp atnugerp al se \ \ Āuc euqĴĴinedĴ 081 Ā 2-nĴ = Āseroiiretni solugnĵĀ ed amusS .ertneucne euq odneidip \Ātse el atnugerp al euq ol euqĴĴinedĴ \*ĀĀ045 = onogĀĉed nu arap seroiiretni solugnĵĀ ed amusS 081 Ā Ā 2-5Ĵ = onogĀĉed nu arap seroiiretni solugnĵĀ ed amusS We need to calculate the number of sides of the largest pods. (b) resolve the size of the b-angle. 4f solve the problem using the information ³ have already gathered. Find the missing angle shown in the diagram. Here we will learn about inner nails in polygons, including how ³ calculate the sum of inner nails for a polygon, unique inner nails and use this knowledge to solve problems. There are also angles in the worksheets of the polls based on the Edexcel, AQA and OCR questions. , along with another ³ about where to go next³ if you are still stuck. We know that the sum of the inner angles for this pool is 1440 Ā°. Identify the number of sides on any polyGon/s managed in the question. The inner angles are the angles within a form. We know that a single angle of this regular polygon is 140 Ā°. 540 - (4 \ Times 155) = 80 Ā° inner angles of a Polygon GCSE Questions 1. Āē ā ° Interior angle °. Angle °.

Get 24/7 customer support help when you place a homework help service order with us. We will guide you on how to place your essay help, proofreading and editing your draft - fixing the grammar, spelling, or formatting of your paper easily and cheaply. A right-angled triangle is a triangle, that has one of its interior angles equal to 90 degrees or any one angle is a right angle. Therefore, this triangle is also called the right triangle or 90-degree triangle. The right triangle plays an important role in trigonometry. Let us learn more about this triangle in this article. The best delivery of the best core curricula LearnZillion empowers teachers to spend less time building student-facing materials from scratch and more time meeting their students needs.