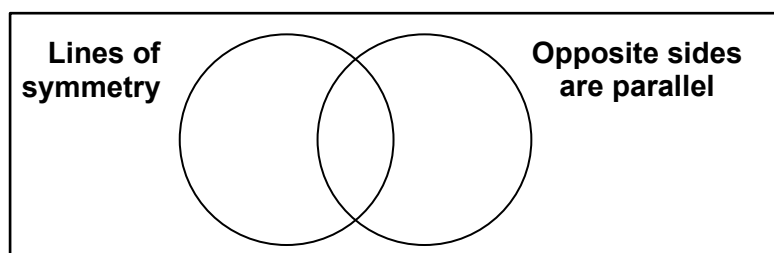


Higher Check In - 8.01 Conventions, notation and terms

1. ABCD is a polygon which has no parallel sides and one pair of equal angles. What is the name of this polygon?
2. Write down the name of any polyhedrons which have the same number of faces and vertices.
3. How many more edges does a pentagonal prism have than a cone?
4. Three points A (3, 5), B (8, 5) and C (6, -1) form three of the vertices of a parallelogram. Find the coordinates of the fourth point D.
5. Place the following quadrilaterals in the correct position in the Venn diagram below.

rectangle kite rhombus parallelogram trapezium



6. ABC is a triangle with lengths $AB = 9$ cm and $AC = 9$ cm. One of the angles is 100° . How many different triangles can be drawn with this information? Explain your answer.
7. A cone is sliced into two equal pieces along the vertical plane through the vertex. Each piece will have two flat faces. What are the shapes of these faces?
8. Triangle ABC with A (2, 5), B (1, 8) and C (4, 9) is reflected in the line $y = 2x + 1$ to form a quadrilateral. Find the coordinates of the fourth vertex, and name the quadrilateral.
9. Sally is designing a patchwork quilt using only regular polygons. She has decided on a floral pattern using one polygon for the centre of the flower and a different polygon for the petals surrounding the flower. If she uses regular pentagons for the petals, how many petals will be needed for each flower?
10. A rectangular table top has a perimeter of 10 m and an area of 5.8 m^2 . Work out whether a tablecloth measuring 2.4 m by 2.6 m would cover this table top.

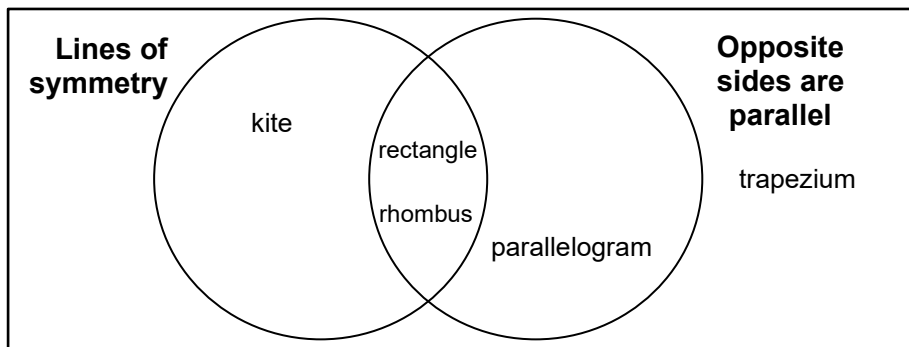
Extension

A tesseract is an "impossible" 4 dimensional cube. By considering the number of vertices of a point in zero dimensions, a line in one dimension, a square in two dimensions and a cube in three dimensions, can you describe the number of vertices in a tesseract?



Answers

1. Kite
2. Any pyramid e.g. triangular-based pyramid, square-based pyramid, pentagonal-based pyramid, hexagonal-based pyramid.
3. 14
4. (1, -1)
- 5.



6. One, because 2 angles in an isosceles triangle are the same and if these were both 100° the sum of the angles in the triangle would be more than 180° .
7. An isosceles triangle and a semicircle.
8. (5, 6), square
9. 10 petals
10. Table top is 1.83 m by 3.17 m so the tablecloth fits the width but not the length.

Extension

16 vertices

Information and images can be found at <https://en.wikipedia.org/wiki/Tesseract>



We'd like to know your view on the resources we produce. By clicking on the 'Like' or 'Dislike' button you can help us to ensure that our resources work for you. When the email template pops up please add additional comments if you wish and then just click 'Send'. Thank you.

OCR Resources: the small print

OCR's resources are provided to support the teaching of OCR specifications, but in no way constitute an endorsed teaching method that is required by the Board, and the decision to use them lies with the individual teacher. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources. We update our resources on a regular basis, so please check the OCR website to ensure you have the most up to date version.

© OCR 2017 - This resource may be freely copied and distributed, as long as the OCR logo and this message remain intact and OCR is acknowledged as the originator of this work.

OCR acknowledges the use of the following content: Square down and Square up: alexwhite/Shutterstock.com



Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Identify a 2D shape from its properties			
AO1	2	Identify a 3D shape from its faces and vertices			
AO1	3	Know the properties of 3D shapes			
AO1	4	Use x and y coordinates in a plane geometry problem			
AO1	5	Know the properties of quadrilaterals			
AO2	6	Know the properties of an isosceles triangle			
AO2	7	Know the properties of 3D shapes			
AO2	8	Use x and y coordinates in a plane geometry problem			
AO3	9	Solve a problem involving regular polygons			
AO3	10	Solve a problem involving a geometric shape			

Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Identify a 2D shape from its properties			
AO1	2	Identify a 3D shape from its faces and vertices			
AO1	3	Know the properties of 3D shapes			
AO1	4	Use x and y coordinates in a plane geometry problem			
AO1	5	Know the properties of quadrilaterals			
AO2	6	Know the properties of an isosceles triangle			
AO2	7	Know the properties of 3D shapes			
AO2	8	Use x and y coordinates in a plane geometry problem			
AO3	9	Solve a problem involving regular polygons			
AO3	10	Solve a problem involving a geometric shape			

Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Identify a 2D shape from its properties			
AO1	2	Identify a 3D shape from its faces and vertices			
AO1	3	Know the properties of 3D shapes			
AO1	4	Use x and y coordinates in a plane geometry problem			
AO1	5	Know the properties of quadrilaterals			
AO2	6	Know the properties of an isosceles triangle			
AO2	7	Know the properties of 3D shapes			
AO2	8	Use x and y coordinates in a plane geometry problem			
AO3	9	Solve a problem involving regular polygons			
AO3	10	Solve a problem involving a geometric shape			

Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Identify a 2D shape from its properties			
AO1	2	Identify a 3D shape from its faces and vertices			
AO1	3	Know the properties of 3D shapes			
AO1	4	Use x and y coordinates in a plane geometry problem			
AO1	5	Know the properties of quadrilaterals			
AO2	6	Know the properties of an isosceles triangle			
AO2	7	Know the properties of 3D shapes			
AO2	8	Use x and y coordinates in a plane geometry problem			
AO3	9	Solve a problem involving regular polygons			
AO3	10	Solve a problem involving a geometric shape			

