

Unit 6 - Geometric Relations : Definitions / Terminology

Polygon: A closed figure made up of line segments.

Regular Polygon: A polygon where all the sides and angles are equal.

Concave Polygon: A polygon with at least one angle greater than 180°

Kite: Quadrilateral with two pairs of adjacent sides equal

Vertex: The point where two or more sides meet.

Interior Angle: Angle formed on the inside of a polygon by two sides meeting at a vertex.

Exterior angle : Angle formed on the outside of a geometric shape by extending one of the sides past a vertex

Polygon Exterior Angle Theorem (PEAST) : Exterior angles of any polygon add to 180 degrees.

Angle Sum Triangle Theorem (ASTT): Sum of Interior angles of a triangle add to 180 degrees.

Angle Sum Quadrilateral Theorem (ASQT): Sum of interior angles of a quadrilateral add to 360 degrees.

Adjacent: Adjoining or next to

Obtuse Angle: An angle greater than 90 degrees

Acute Angle: An angle less than 90 degrees

Supplementary: Adding to 180 degrees

Complementary: Adding to 90 degrees

Transversal: A line intersecting two parallel lines

Parallel Lines

- Alternate angles are equal (Z pattern) (AA)
- Corresponding angles are equal (F pattern) (CA)
- Co - Interior angles add to 180 degrees (C Pattern) (CIA)

Opposite Angles: Equal (OAT)

Midpoint: A point that divides a line segment into two equal parts

Right Bisector: A line perpendicular to a line segment passing through its midpoint

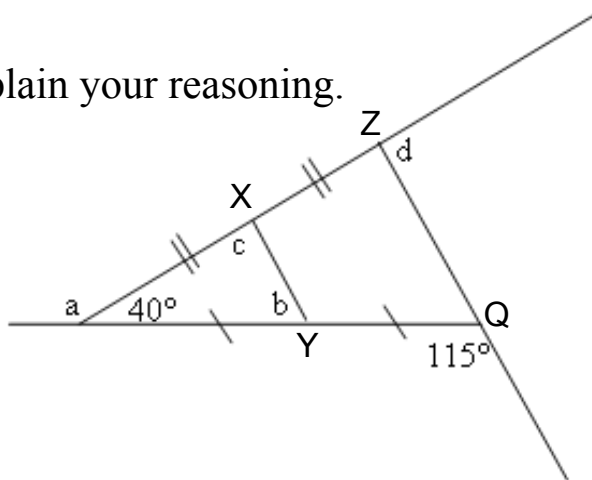
Median: The line segment joining the vertex of a triangle to the midpoint of the opposite side.

Centroid: Intersection of the medians of a triangle

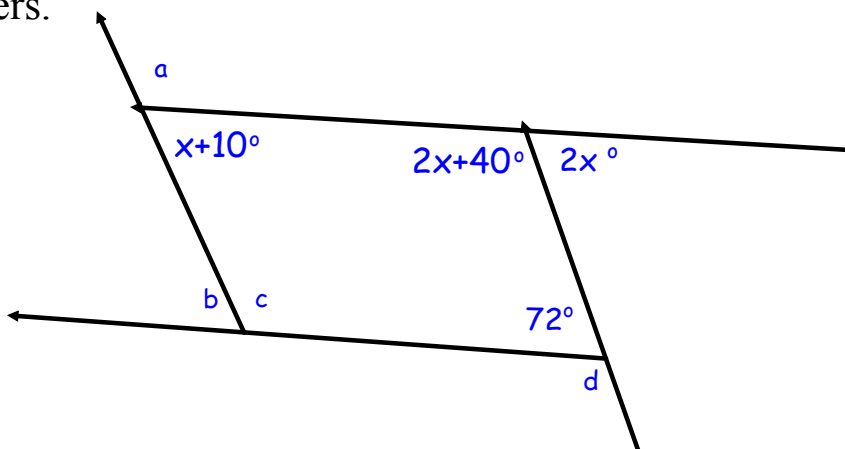
Circumcentre: Intersection of the right bisectors of a triangle

Convex Polygon: A polygon with all angles less than 180°

1. Find angle a, b, c, d and explain your reasoning.



2. Find the measure of all the unknown angles and justify your answers.



3. How many sides does a polygon have if the sum of its interior angles is 1980° ?

4. A dodecagon is a 12 sided figure. The sum of 11 angles of a dodecagon is 1710° , what is the measure of the 12th angle?

5. What is the area of $\triangle ABD$ if the area of $\triangle ABC$ is 50 cm^2 ?

