More Terminology and Notation:

**Plane:** It’s an infinitely large flat surface.

**Line:** It’s a straight arrangement of points that extends indefinitely in opposite directions.

![Diagram of a line AB with points A and B](image)

**Collinear Points:** Points that lie on the same line are called collinear points.

![Diagram of collinear points A, B, C, and D](image)

**Concurrent Lines:** Three or more lines that contain the same point are called concurrent.

![Diagram of concurrent lines](image)
**Line Segment:** It’s the straight arrangement of points that connect two points called the endpoints.

![Line Segment Diagram]

**Midpoint:** It’s the point on a line segment that is equidistant from the endpoints.

![Midpoint Diagram]

**Ray:** It’s a straight arrangement of points that extends indefinitely in one direction from a point called its endpoint.

![Ray Diagram]
**Convex and Concave Regions:** A region is convex if for every pair of points in the region, the line segment connecting them is also in the region. A region is concave if there is at least one pair of points in the region where the connecting line segment leaves the region.

Convex:

![Convex Examples](image1)

Concave:

![Concave Examples](image2)
**Angle:** It’s the union of two line segments with a common endpoint or the union of two rays with a common endpoint. The common endpoint is called its vertex, and the line segments or rays are called its sides.

**Interior/Exterior of an Angle:** An angle that is formed by two rays divides a plane into three parts: the angle, the interior of the angle, and the exterior of the angle.

Exterior (concave)
Adjacent Angles: They are two angles that share a vertex, have a common side, but whose interiors don’t intersect.

∠DAB and ∠BAC are adjacent angles.

Acute Angle: An angle whose degree measure is less than 90°.

\[ m(∠BAC) < 90° \]
**Right Angle:** An angle whose degree measure is equal to $90^\circ$.

\[ m(\angle BAC) = 90^\circ \]

**Obtuse Angle:** An angle whose degree measure is greater than $90^\circ$ but less than $180^\circ$.

\[ 90^\circ < m(\angle BAC) < 180^\circ \]
**Straight Angle:** An angle whose degree measure is equal to $180^\circ$. Interior and exterior are convex.

$$m(\angle BAC) = 180^\circ$$

**Reflex Angle:** An angle whose degree measure is greater than $180^\circ$ but less than $360^\circ$. Interior is concave, and the exterior is convex.

$$180^\circ < m(\angle BAC) < 360^\circ$$
**Vertical Angles:** When two lines intersect, angles are formed. The pairs of non-adjacent angles are called vertical angles.

\[ \angle 1 \text{ and } \angle 3 \text{ are vertical angles.} \]

\[ \angle 2 \text{ and } \angle 4 \text{ are vertical angles.} \]

Vertical angles are congruent.
Complementary Angles: If the measures of two angles add up to $90^\circ$, then the two angles are complementary.

$\angle BAD$ and $\angle DAC$ are complementary angles.

Supplementary Angles: If the measures of two angles add up to $180^\circ$, then the two angles are supplementary.

$\angle BAD$ and $\angle DAC$ are supplementary angles.
Find the value of $x$. 
Two Parallel Lines Intersected by a Transversal:

Corresponding Angles: Pairs of angles that match up.

∠1 and ∠5 are corresponding angles.
∠2 and ∠6 are corresponding angles.
∠3 and ∠7 are corresponding angles.
∠4 and ∠8 are corresponding angles.

Corresponding angles are congruent.
Alternate Interior Angles: Pairs of non-adjacent angles between the parallel lines but on opposite sides of the transversal.

\[ \angle 3 \text{ and } \angle 5 \text{ are alternate interior angles.} \]

\[ \angle 4 \text{ and } \angle 6 \text{ are alternate interior angles.} \]

Alternate interior angles are congruent.

Complete the labelling of the angle measures in the following pair of parallel lines cut by a transversal.

\[ \angle 160^\circ \]
The sum of the angle measures in a triangle:

So \( m(\angle 1) + m(\angle 2) + m(\angle 3) = \)
Find the missing angle measure in the following triangle.