

G.G.35: Parallel Lines and Transversals: Determine if two lines cut by a transversal are parallel based on the measure of given pairs of angles formed by the transversal and lines.

1. A transversal intersects two lines. Which condition would always make the two lines parallel?

- 1) Vertical angles are congruent.
- 2) Alternate interior angles are congruent.
- 3) Corresponding angles are supplementary.
- 4) Same-side interior angles are complementary

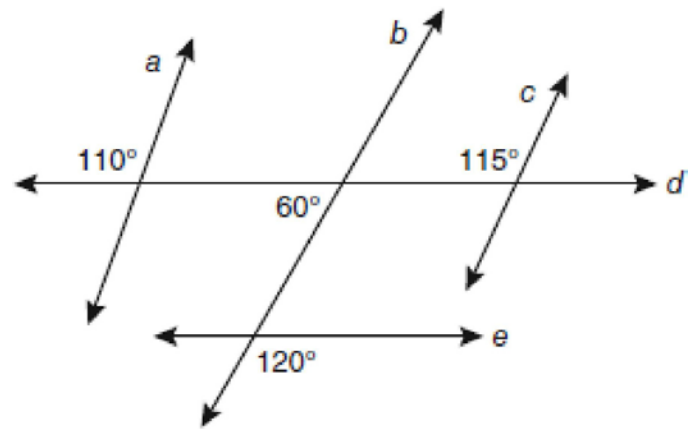
2. Based on the diagram, state if the following pairs of lines are parallel and justify each response.

$a \parallel b$

$b \parallel c$

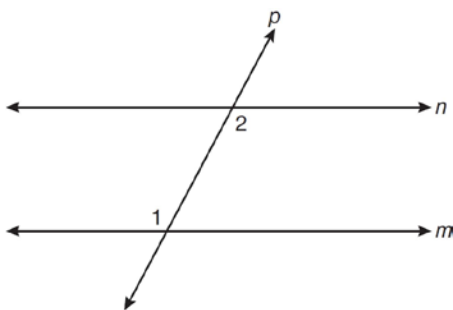
$a \parallel c$

$d \parallel e$

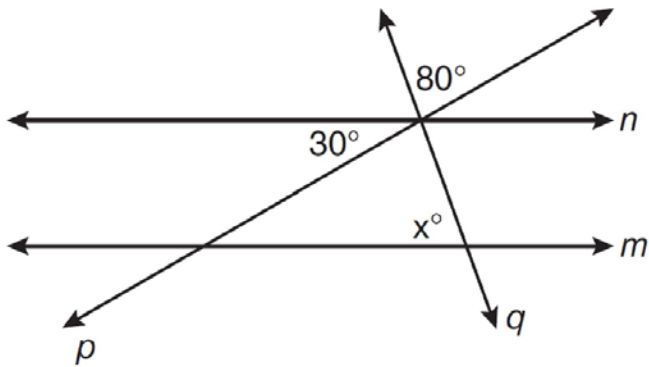


3. In the diagram below, line p intersects line m and line n .

If $m\angle 1 = 7x$ and $m\angle 2 = 5x + 30$, lines m and n are parallel when x equals...



4. In the diagram below, lines n and m are cut by transversals p and q . What value of x would make lines n and m parallel? With each statement, justify your decision.



5. In the diagram below of quadrilateral $ABCD$ with diagonal BD , $m\angle A = 93$, $m\angle ADB = 43$, $m\angle C = 3x + 5$, $m\angle BDC = x + 19$, and $m\angle DBC = 2x + 6$. Determine if AB is parallel to DC . Explain your reasoning. (**Hint: The angles inside or a triangle add up to 180°**)

