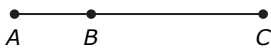


LESSON 159 Review: Geometry Basics

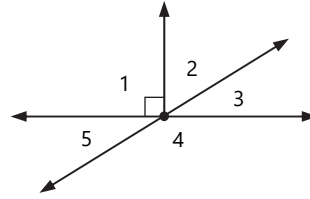
- Determine if each statement is true or false. If false, explain why or give a counterexample.
 - A line has two endpoints.
 - Line \overleftrightarrow{AB} is different from line \overleftrightarrow{BA} .
 - Ray \overrightarrow{AB} is different from ray \overrightarrow{BA} .
 - Collinear points are coplanar.
 - Parallel lines never intersect.
 - Two planes can intersect in a point.
 - Vertical angles are adjacent.
 - Angles in a linear pair are adjacent.
 - Every angle has a complement.
 - Every angle has a supplement.
 - A triangle can have two right angles.
 - All equilateral triangles are isosceles.
 - A right triangle has two acute angles.
 - A circle is a polygon.
 - A square is a regular polygon.
 - A trapezoid has four right angles.

- Find AC if $AB = x$, $BC = x + 5$, and $AC = 3x + 1$.



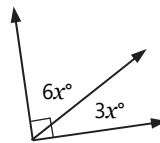
- M is the midpoint of \overline{PQ} . Find the value of x if $PQ = 12$ and $PM = x - 4$.
- \overrightarrow{BP} is the bisector of $\angle ABC$. What is the measure of $\angle ABC$ if $m\angle ABP = (3x + 7)^\circ$ and $m\angle CBP = (5x - 1)^\circ$?

- Name all linear pairs and vertical angles.

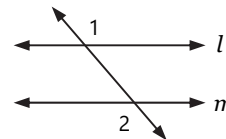


- In the diagram above, $m\angle 3 = 32^\circ$. Find the measures of the other numbered angles.

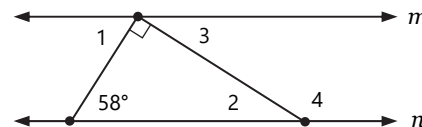
- Find the value of x .



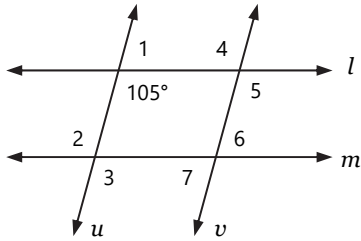
- Two lines are cut by a transversal. How many pairs of corresponding angles are formed?
- Can you conclude $l \parallel m$ if $\angle 1 \cong \angle 2$? Explain.



- Find the measures of the numbered angles if $m \parallel n$.



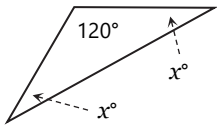
11. Find the measures of the numbered angles if $l \parallel m$ and $u \parallel v$.



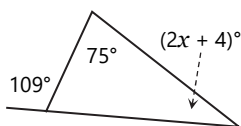
12. A triangle has angles measuring 20° , 30° , and 130° . Classify the triangle as *acute*, *right*, or *obtuse*.

13. Can angles 90° , 45° , and 40° form a triangle? Explain.

14. Find the value of x in the triangle.



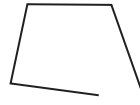
15. Find the value of x in the triangle.



16. Name all quadrilaterals with four congruent sides.

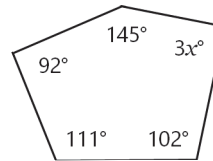
17. Name all quadrilaterals with four right angles.

18. Explain why the figure is not a polygon.

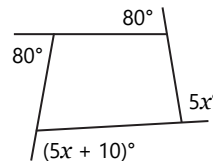


19. What is the sum of the interior angles of a heptagon (a polygon with 7 sides)?

20. Find the value of x in the pentagon.



21. Find the value of x in the quadrilateral.



22. (HONORS) Explain why a quadrilateral with four congruent angles must be a rectangle. (*Hint*: Use the angle sum property.)

23. (HONORS) Write the formula that gives the measure of one interior angle of a regular polygon with n sides.

24. (HONORS) Write the formula that gives the measure of one exterior angle of a regular polygon with n sides.