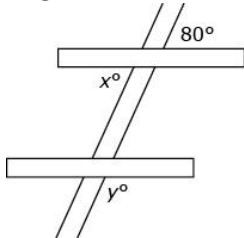


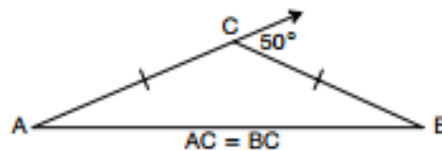
8.G.5 Use informal arguments to establish facts about the angle sum and exterior angles triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.

The figure shows part of a stepladder with two steps. Each step is parallel to the ground and attached to a diagonal rod.



Which conclusion is true based on the given information and angle relationships?

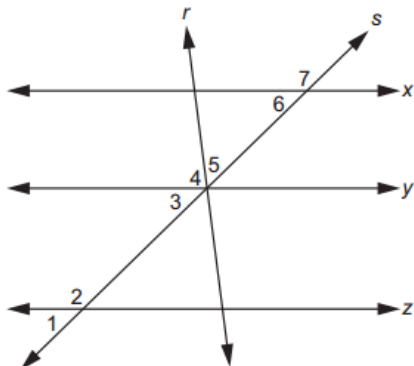
- A) The value of x is 80 because vertical angles are congruent.
- B) The value of x is 80 because adjacent angles are congruent.
- C) The value of y is 100 because vertical angles are supplementary
- D) The value of y is 100 because alternate exterior angles are supplementary.



In triangle ABC, the measure of angle A is:

- A. 25° .
- B. 40° .
- C. 45° .
- D. 50° .

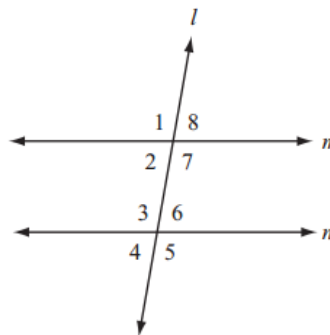
In the diagram below, lines x , y , and z are all parallel, and lines r and s intersect at line y .



Which equation must be true?

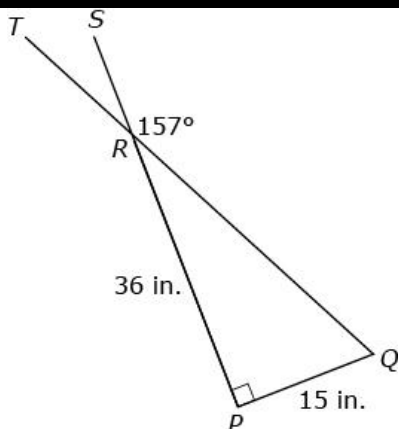
- A. $m\angle 1 = 180^\circ - m\angle 7$
- B. $m\angle 2 = 90^\circ + m\angle 5$
- C. $m\angle 3 + m\angle 4 = m\angle 7$
- D. $m\angle 5 + m\angle 6 = m\angle 7$

Line m and line n are parallel lines intersected by a transversal line l , as shown below.



Which of the following angle pairs are congruent?

- A. $\angle 1$ and $\angle 8$
- B. $\angle 2$ and $\angle 6$
- C. $\angle 6$ and $\angle 7$
- D. $\angle 8$ and $\angle 5$



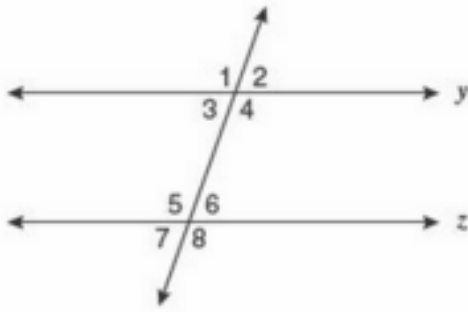
Line segments PS and QT intersect at point R. Point R is a vertex of right triangle RPQ.

Part A: What is the measure of angle PQR? Explain.

Part B: What is the length of segment RQ? Explain.

8.G.5 Use informal arguments to establish facts about the angle sum and exterior angles triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.

Given $m\angle 1 = 110^\circ$.

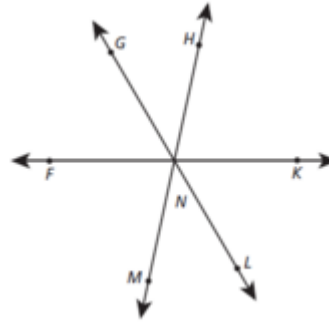


Which must be true if y is parallel to z ?

- (A.) $m\angle 8 = 100^\circ$
- (B.) $m\angle 7 = 110^\circ$
- (C.) $m\angle 6 = 80^\circ$
- (D.) $m\angle 5 = 110^\circ$

In the diagram below, three lines intersect at N .

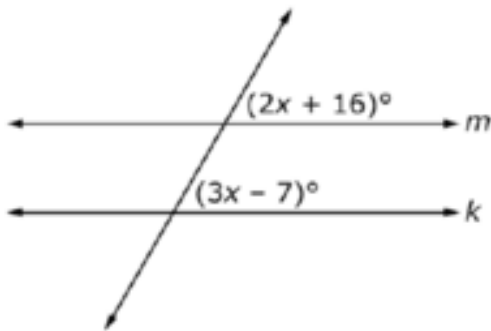
The measure of $\angle GNF$ is 60° , and the measure of $\angle MNL$ is 47° . What is the measure of $\angle HNK$?



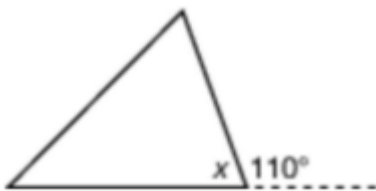
What is the measure of $\angle HNK$?

- (A.) 47°
- (B.) 60°
- (C.) 73°
- (D.) 107°

In the figure below, $x = 23$. Is line k parallel to line m ? Explain your answer.



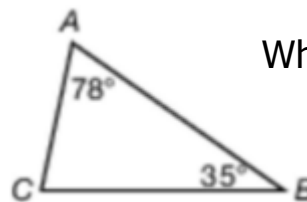
The triangle below has an exterior angle of 110 degrees.



What is the value of x ?

- A. 70°
- B. 80°
- C. 90°
- D. 110°

In triangle ABC , the measure of angle A is 78 degrees and the measure of angle B is 35 degrees.



What is the measure of angle C ?

- A. 67°
- B. 70°
- C. 77°
- D. 102°