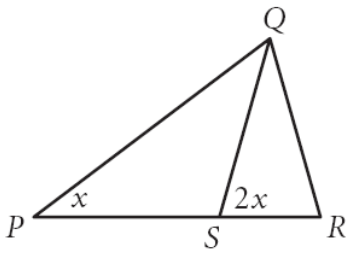
Name: _____

Triangle Inequality

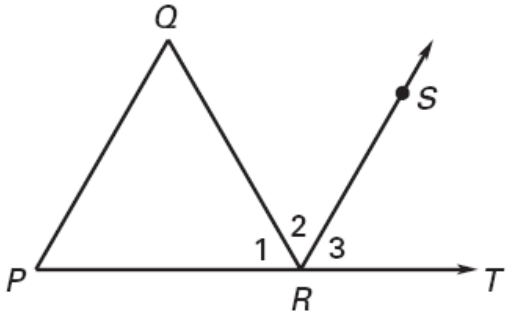
Exercise 1: A triangle has one side of length 8 cm and another of length 17 cm. Describe the possible lengths of the third side.

Exercise 2: Explain why $\triangle PQS$ is an isosceles triangle.

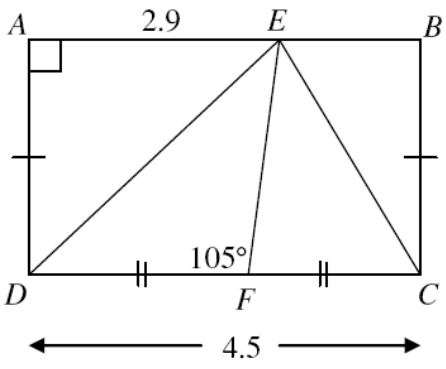


Exercise 3: Explain why the sum of the three altitudes of a triangle is always less than its perimeter.

Exercise 4: Given: $\overrightarrow{RS}$ bisects $\angle QRT$, $\overline{PQ} \cong \overline{RS}$. Prove: $\triangle PQR$ is an isosceles triangle with vertex R



Exercise 5: *Given that EF* = 2.9 cm and *AD* = 2.8 cm. Describe how each pair of angle or segment measures is related.

1. $m\angle AED$ and $m\angle DEF$

2. *DE*, *EC*