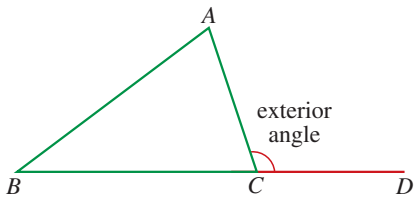
C. Exterior Angle of a Triangle

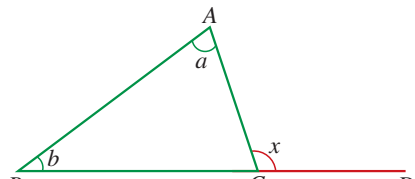


When a side of a triangle is produced, an angle outside the triangle is formed. This angle formed is called an **exterior angle** of the triangle.

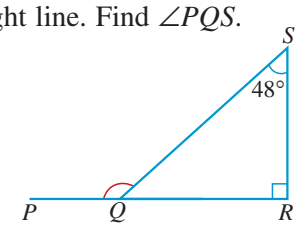
The result in Question 2 of Class Activity 1 reveals the following property.

> An exterior angle of a triangle is equal to the sum of the two interior opposite angles.
> (Abbreviation: ext. $\angle$ of $\triangle$)

In the figure,
$\angle x = \angle a + \angle b$ (ext. $\angle$ of $\triangle$).

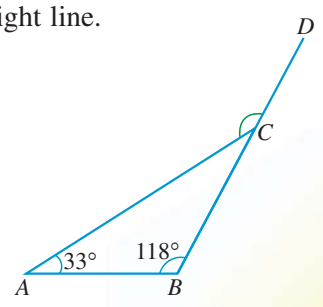


Example 3 In the figure, PQR is a straight line. Find $\angle PQS$.

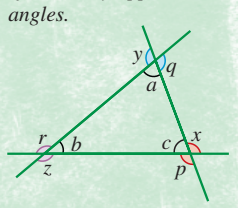


Solution
$\angle PQS = \angle QSR + \angle QRS$ (ext. $\angle$ of $\triangle$)
$= 48° + 90°$
$= 138°$

Try It 3! In the figure, BCD is a straight line. Find $\angle ACD$.



A triangle has 6 exterior angles that form 3 pairs of vertically opposite angles.



In the above figure,
$\angle p = \angle x = \angle a + \angle b$,
$\angle q = \angle y = \angle b + \angle c$,
$\angle r = \angle z = \angle a + \angle c$.

Remark