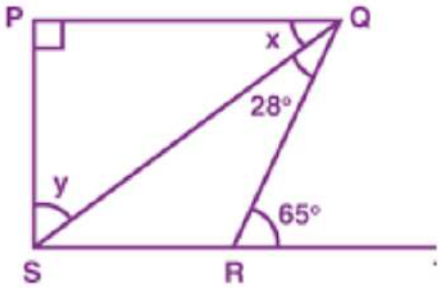
$$M=\left(\frac{x_1+x_2}{2},\frac{y_1+y_2}{2}\right)$$

# Math League:the 4th week

**In ancient Greece, mathematicians were deeply interested in the properties of triangles, leading to the discovery that the sum of a triangle's interior angles always equals 180 degrees. This discovery began with early geometric explorations, but it was Euclid, around 300 BCE, who precisely proved it in his seminal work "Elements." In one of his proofs, Euclid used the properties of triangles and alternate angles to demonstrate that the sum of a triangle's interior angles always remains 180 degrees. He showed that no matter the shape of the triangle, its interior angles would always total 180 degrees, which became a fundamental principle in geometry. This discovery was crucial, laying the foundation for future mathematical theories and influencing the development of Euclidean geometry and trigonometry.**



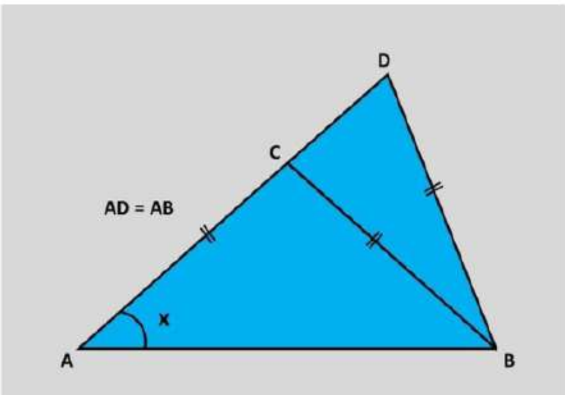

***The sum role is used a lot .Check this problem:***
***find x+y knowing that spqr is trapezoid***

$$V=\pi r^2 h$$

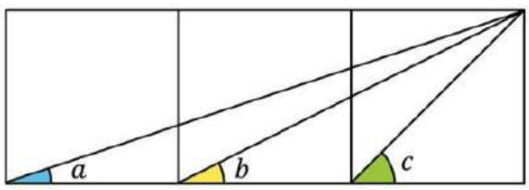
$$V=Lwh$$

**The discovery that the sum of a triangle's angles always equals 180 degrees revolutionized the field of mathematical geometry. This fundamental principle enabled the development of many geometric theories, including methods for calculating areas and working with polygons. It also enhanced our understanding of Euclidean geometry, leading to advancements in construction and architectural design. In applied sciences, this discovery improved the accuracy of maps and the design of engineering devices, making architectural and structural work more efficient. Furthermore, it established a foundational base for developments in trigonometry, which is a vital tool in numerous scientific and engineering disciplines.**

**HERE WE HAVE TWO PROBLEMS IN WHICH YOU CAN SEE HOW THE SUM RULE IS IMPORTANT**




$$a+b+c=?$$




$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$$