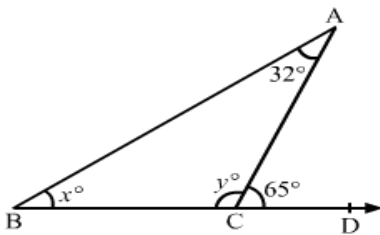


Maths Class – 7 Triangles and their Properties -3

- If one angle of a triangle is equal to the sum of the other two, show that the triangle is right-angled.
- An exterior angle of a triangle is 100° and its interior opposite angles are equal to each other. Find the measure of each angle of the triangle.
- In fig. figure given alongside, find the values of x and y .



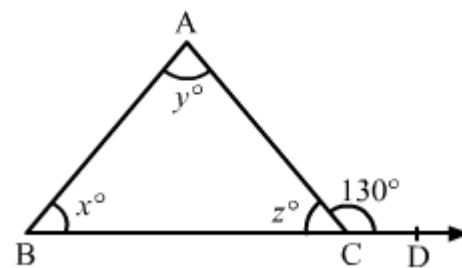
- $ABCD$ is quadrilateral. Prove that $(AB + BC + CD + DA) > (AC + BD)$
- If O is a point in the exterior of $\triangle ABC$, show that $2(OA + OB + OC) > (AB + BC + CA)$.

- The two legs of a right triangle are equal and the square of its hypotenuse is 50. Find the length of each leg.
- The sides of a triangle measure 15 cm, 36 cm and 39 cm. Show that it is a right-angled triangle.
- A tree is broken by the wind but does not separate. If the point from where it breaks is 9 m above the ground and its top touches the ground at a distance of 12 m from its foot, find out the total height of the tree before it broke.
- Two poles, 18 m and 13 m high, stand upright in a playground. If their feet are 12 m apart, find the distance between their tops.
- Find the perimeter of a rhombus, the lengths of whose diagonals are 16 cm and 30 cm.

11. Fill in the blanks:

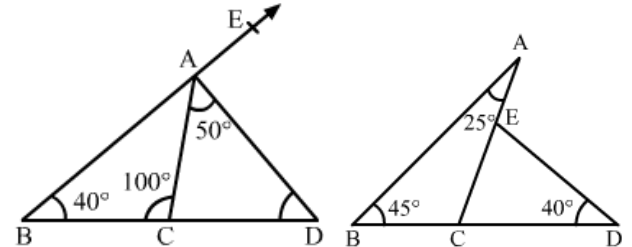
- In a right triangle, the square of the hypotenuse is equal to the of the squares of the other two sides.
- If the square of one side of a triangle is equal to the sum of the squares of the other two sides then the triangle is
- Of all the line segments that can be drawn to a given line from a given point outside it, the is the shortest.

12. In the figure given alongside, $x : y = 2 : 3$ and $\angle ACD = 130^\circ$. Find the values of x , y and z .



13. In the fig(i)re given alongside, find:

- $\angle ACD$
- $\angle ADC$
- $\angle DAE$



14. In the figure (ii) given above, find:

- $\angle ACD$
- $\angle AED$

15. Find the value of x in each fig.

