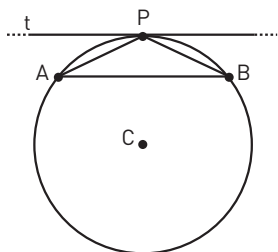
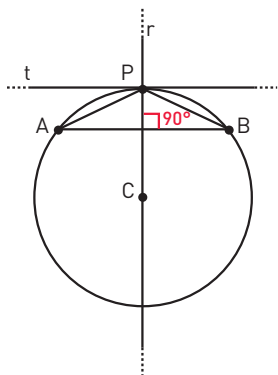


YOU & MATHS **A tangent parallel line** Let AP and PB be two congruent chords in a given circle. Prove that the tangent line that touches the circumference at P is parallel to AB .

Let us draw the circle with centre C , the two chords, the tangent line t and the line segment AB .



Then let us draw r , the perpendicular bisector of the line segment AB that meets AB in its midpoint M . Since r is the locus of all the points that are equidistant from A and B , we say that P belongs to r because $AP \cong BP$, and that C belongs to r because A and B belong to the circle with centre C , so $AC \cong BC$.



Since C and P belong to r , we can deduce that r is perpendicular to t , because by definition t is perpendicular to the segment CP .

Therefore we can conclude that AB and t are parallel, since they are perpendicular to the same line r .