



Here is another proof almost identical to the one in CTK, maybe a bit shorter

By extending PM to its intersection with the circumference we get point S

By drawing a line from S thru B will intersect the prolongation of AC on F

Angle MSA equal MSF since P bisects the original arc AB. Then segment AM = MF

We are to proof than CF equal CB

Angle CBF is supplementary of CBS, now since ACBS is an inscribed quadrilateral therefore CAS and CFB are equal for being supplementary both of CBS, which proof CF equal CB