# Geometry - Homework 1
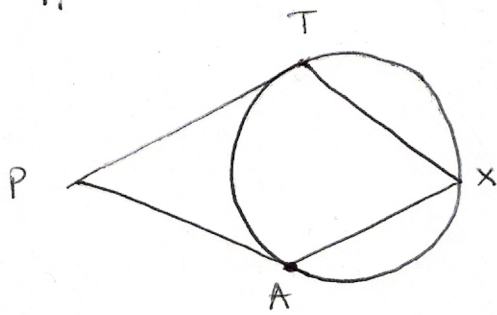
**1.**
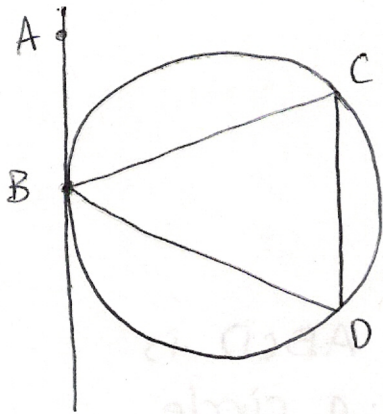


Segments PT and PA are tangent to the circle. If $\angle P = 40°$, what is $\angle TXA$?
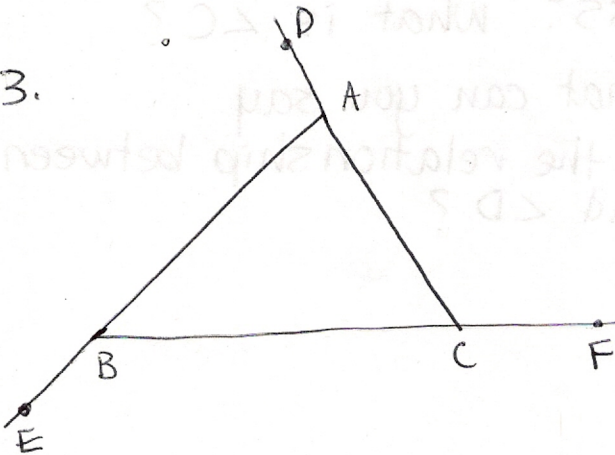
(Use the fact that the sum of the angles in a quadrilateral is $360°$)

**2.**



Given that $\angle ABC = 60°$ and $\angle BCD = 70°$ and $\overline{AB}$ is tangent to the circle, find $\angle CBD$.
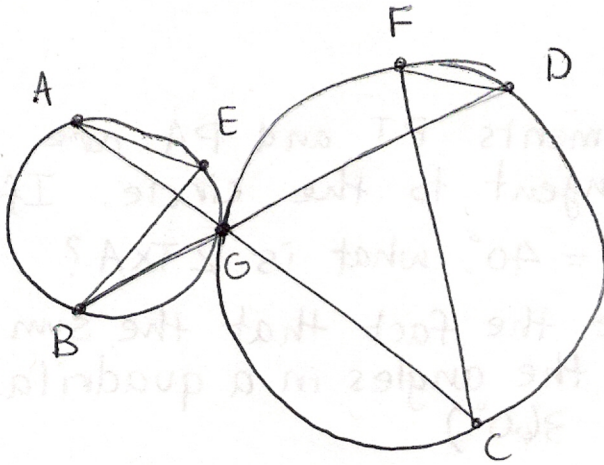
**3.**



For any triangle ABC, we can extend the sides of the triangles in one direction to define _exterior angles_ $\angle FCA$, $\angle DAB$ and $\angle EBC$.

(a) show that $\angle FCA = \angle CBA + \angle BAC$

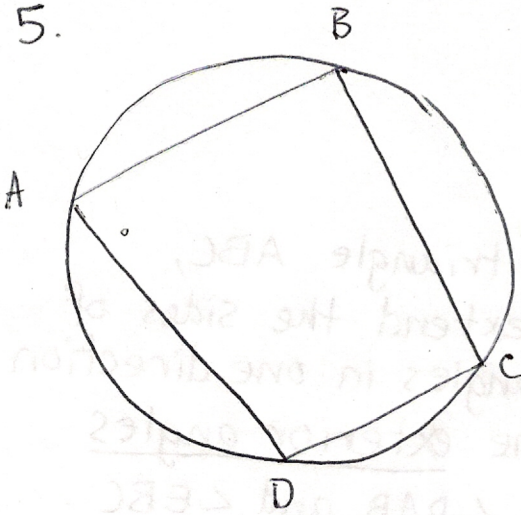(b) show that the sum of the exterior angles of a triangle is $360°$.

**4.**



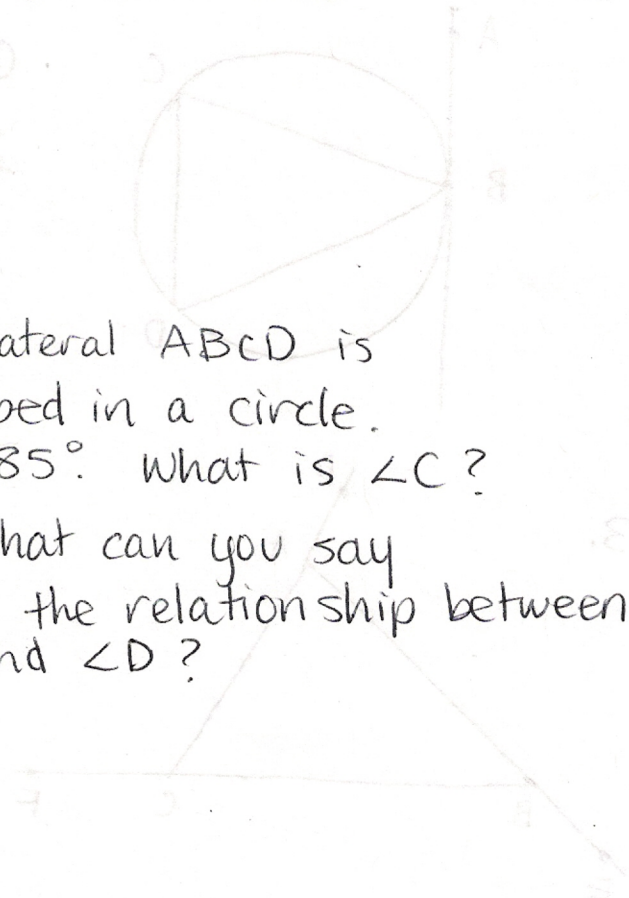The two circles are tangent at point G. Lines BD and AC also intersect at G. Show that $\angle E = \angle F$.

**5.**



Quadrilateral ABCD is inscribed in a circle. $\angle A = 85°$. What is $\angle C$?

Also, what can you say about the relationship between $\angle B$ and $\angle D$?