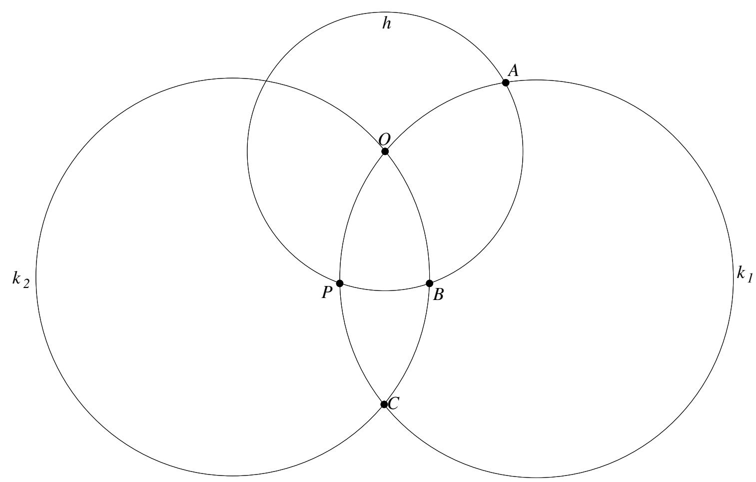
MAT 365 Fall 2002 hw 3 Name:

Instructor: Nándor Sieben
e-mail: nandor.sieben@nau.edu
http://jan.ucc.nau.edu/~ns46/365/365.html
Office: AMB 175, Phone: 523-6874
Hours: MWF 11:20 – 12:20 MW 1:40 – 2:40

1. Circles k_1 and k_2 have the same radius, and the center of h is O. Show that A, B and C are collinear. *Hint:* show that $\angle PAC = \angle PAB$.



Solution: We have

$$\begin{aligned} \angle PAC &= \angle POC && \text{both are inscribed in } k_1 \text{ corresponding to arc } PC \\ &= \frac{1}{2}\angle POB && \text{since the whole figure is symmetric w.r.t. } OC \\ &= \angle PAB && \text{since } \angle POB \text{ is the corresponding central angle in } h \end{aligned}$$