



Geometric Manipulation Problem Suggestions

nprime06

GRU

 **Problem 1** (nprime06) $ABCD$ is a parallelogram with a point P in its interior that satisfies $\angle ABP = \angle ADP$. Show that $\angle PAD = \angle PCD$.

 **Problem 2** (Tuymaada 2005) In a triangle ABC , let A_1, B_1, C_1 be the A, B, C -extouch points (ie. place where A -excircle touches BC , etc.). Prove that AA_1, BB_1, CC_1 are the sides of a nondegenerate triangle.