```cpp
/*

    ROTATING CALIPERS ALVARO

*/


int rotatingCalipers(vector<point> &up, vector<point> &dn){
    int ans = 0;

    int i = 0, j = dn.size()-1;

    while(i < (int)up.size() - 1 || j > 0){
        // Entrou aqui: up[i] e dn[j] eh um antipodal pair
        ans = max(ans, dist2(up[i],dn[j]));

        if(i == (int)up.size()-1) j--;
        else if(j == 0) i++;
        else{
            // Verifica qual o menor angulo a ser rotacionado p utilizar na rotacao
            if((up[i+1].y - up[i].y) * (dn[j].x - dn[j-1].x)
                > (dn[j].y - dn[j-1].y) * (up[i+1].x - up[i].x ))
                i++;
            else
                j--;
        }
    }
    return ans;
}

```