Problem 7: Find the Angle

Let ABC be an equilateral triangle. A point D is picked on BC (between B and C) and the edge AC is extended linearly to a point K so that $|BD| = |CK|$. If $\angle BAD = 40^\circ$, find the angle $\angle CKD$.

As always, show your work, fully explain and justify your answer. A solution mainly obtained by computers or calculators, or answers without proper justification will not be accepted.

Posting Date 11/25/2018. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 4 pm on 12/7/18.