Name:……………………………………..

Problem 1: A speed reducer made out of a parallel helical gearset uses a 17-tooth pinion driving a 68-tooth gear. The Pinion has a right helix angle of 30°, a normal pressure angle of 25°, and diametral normal pitch of 6 teeth/in. Find:
a) The normal, transverse and axial circular pitches.
b) The normal base circular pitch.
c) The transverse diametral pitch and the transverse pressure angle.
d) The addendum, dedendum, and pitch diameter of each gear.
Problem 2: The pinion of the gear-set of a speed reducer is to be made out of steel and the gear out of cast-iron. The pinion has 16 teeth, a diametral pitch of 12 teeth/in and a contact angle of 20 degree. The speed ratio is 3:1. If the power input is 2 hp at the pinion speed of 800 rev/min. Question: Find the minimum face width \((F)\) based on an allowable contact stress of 120 kpsi.