

4. QUIZ 3B

Open book and notes. You may also use a calculator and/or laptop computer. But no internet or IM with friends.

Let $G = D_4 \oplus D_4$ where D_4 is the dihedral group of order 8.

- (1) Find two nontrivial proper subgroups H, N of G so that N is normal and H is not normal in G . (*nontrivial* means more than one element and *proper* means not equal to G .)
- (2) List the elements of the factor group G/N .
- (3) Find the order of each of the elements of G/N .