

**Name:** \_\_\_\_\_

1. Consider the group  $\mathbb{Z}_{18}$ .

(a) Give an example of a normal series for  $\mathbb{Z}_{18}$  that is not a composition (or principle) series.

(b) Show how you can use quotient groups to extend your normal series to a composition series.

(c) Give a different composition series and find all of its quotient groups. How do these relate to the quotient groups of the other composition series?