## Applied Algebra

Instructions Please write your name in the upper right-hand corner of the page. Use complete sentences, along with any necessary supporting calculations, to answer the following questions.

1. Consider the set of integers that are divisible either by 2 or by 3 or by both 2 and 3 . Is this subset of the integers a subgroup of the integers (under addition)? Explain why or why not.

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2. List all the cyclic subgroups of the group $\left(\mathbb{Z}_{6},+\right)$ [the integers $\bmod 6$ under addition].
