

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

**Part 1: Definitions and Concepts**

1) Let  $n$  be an integer. State the definition for  $n$  to be an even integer. Be precise: vague answers will be given no credit.

2) Let  $n$  and  $m$  be integers. State the definition for  $n$  to divide  $m$ . Be precise: vague answers will be given no credit.

3) Determine whether the following are true or false.

T or F (I)       $5|20$

T or F (II)       $3|20$

T or F (III)       $12|4$

T or F (IV)      18 is even.

T or F (V)      0 is even.

## Part 2: Proofs

4) Let  $n$  be an even number. Prove that  $n + 7$  is an odd number.