

Four of these problems (*our* choice, not yours) will be graded, with each problem worth 5 points. Clear and complete justification is required for full credit. You are welcome to discuss these problems with anyone and everyone, but must write up your own final submission without reference to any sources other than the textbook and instructor. Submissions must be on clean paper with no ragged edges.

1. The product of an even and an odd integer is even.
2. The product of a throdd and a throddodd integer is throddodd.
3. The sum of two throddodd numbers is throdd.
4. The sum of any three consecutive integers is threven.
5. The product of an even and a throdd integer is throddodd.
6. The sum of an odd and a throddodd integer is threven.
7. 2 divides any even integer.
8. If  $p$  divides  $m$  and  $q$  divides  $n$ , then  $pq$  divides  $mn$ .

