For each of the following rings answer the following questions:

1. Is it an *integral domain*?
2. Is it a *principal ideal domain (PID)*?
3. Is it a *field*?

Give reasons (i.e. short proofs, if needed) for your answer.

1. ;
2. ;
3. with componentwise addition and multiplication;
4. with ;
5. with ;
6. with ;
7. with and.