Write a class **Rational** which represents a numerical value by two double values *Numerator* and *Denominator*. Include the following public member functions:

- Constructor with no arguments (default).
- Constructor with two parameters.
- Reduce() function to reduce the rational number by eliminating the highest common factor between the numerator and the denominator.
- Overload the addition, subtraction, multiplication and division operators for this class
  - +   (Addition)
  - −   (Subtraction
  - x   (Multiplication)
  - ⁄.   (Division)
- Overload >> operator to enable input through in.
- Overload << operator to enable output through out.
- Overload the relational and equality operators for this class.
  - <   (Less than)
  - >   (Greater than)
  - <= (Less than or equal to)
  - >= (Greater than or equal to)
  - != (Not equal)
  - == (Equal to)
- Overload pre-increment, pre-decrement, post-increment and post-decrement operator if denominator in a rational number is "1".