

▼ Rational.java

▼ Rational

▲ defined

■ p

■ q

● Rational()

Takes a double input and uses that to initialize numerator and denominator. Example new Rational(2.5), will give values: p =5, q = 2

● Rational(double)

● Rational(double, double)

Takes two double numbers as input and initializes p and q based upon that. Example, new Rational(2.5, 1.5), gives values: p = 5, q =1

● Rational(int, int)

● add(Rational) : Rational

● decimalValue() : double

■ deciToFracHelper(double) : int

Is a private method, that helps to covert decimal to fraction. Keep multiplying decimal number by 10 untill decimal number and its equivalent int value are equal.

● divide(Rational) : Rational

● equals(Rational) : boolean

■ gcf(int, int) : int

● getP() : int

● getQ() : int

● isDefined() : boolean

● multiply(Rational) : Rational

● reduce() : void

● setP(int) : void

● setQ(int) : void

● subtract(Rational) : Rational

● toString() : String

Write a class called Rational to store a rational number.

A rational number is a number of the form  $p/q$ , where p and q are integers. This class has two data members' p and q representing numerators and denominator. Default constructor sets this rational number to 1. Write an overloaded constructor which takes two parameters, if denominator is zero, set boolean defined to false. Use numerator to hold the sign of the rational numbers. Write get, set, add, subtract and rest of the methods as described in the Rational Class.