

Relative prime or not

Relative prime: Two integers are said to be relative prime if only if common factor between them is 1. That is greatest common divisor (GCD) is 1.

(a)

The pair of numbers 1274 and 10505 are relatively prime.

Explanation:

Take first $1274 = 2 \times 7 \times 7 \times 13 \times 1$.

Next take $10505 = 5 \times 11 \times 191 \times 1$.

Now observed, the common factor between 1274 and 10505 is 1.

That is, $GCD(1274, 10505) = 1$.

From the definition of relative prime, the GCD must have 1. Here GCD is 1.

So, the pair numbers 1274 and 10505 are relative prime.

(b)

The pair of numbers 7289 and 8029 are not relatively prime.

Explanation:

Take first $7289 = 37 \times 197 \times 1$.

Next take $8029 = 7 \times 31 \times 37 \times 1$.

Now observed, the common factors between 7289 and 8029 are 37 and 1.

Hence $GCD(7289, 8029) = 37$

From the definition of relative prime, the GCD must have 1. Here GCD is not equal to 1.

So, the pair numbers **7289** and 8029 are not relatively prime.