









## Results:

 `addFraction(W,N,D,1,2,1,4)`   





W	N	D	
0	3	4	1

?- `addFraction(W,N,D,1,2,1,4)`

 `addFraction(W,N,D,3,8,1,2)`   

W	N	D	
0	7	8	1

?- `addFraction(W,N,D,3,8,1,2)`

 `addFraction(W,N,D,7,2,1,4)`   

W	N	D	
3	3	4	1

?- `addFraction(W,N,D,7,2,1,4)`

**Code:**

```
%getting GCD
```

```
gcd(X, 0, X).
```

```
gcd(X, Y, G) :-
```

- $Y > 0$ ,
- $R$  is  $X \bmod Y$ ,
- $\text{gcd}(Y, R, G)$ .

```
%function that simplifies the output
```

```
simplify(N, D, N1, D1) :-
```

- GCD is  $\text{gcd}(N, D)$ ,
- $N1$  is  $N // \text{GCD}$ ,
- $D1$  is  $D // \text{GCD}$ .

```
addFraction(W, N, D, N1, D1, N2, D2) :-
```

- Num is  $N1 * D2 + N2 * D1$ ,
- Den is  $D1 * D2$ ,
- $\text{simplify}(\text{Num}, \text{Den}, \text{NumSimp}, \text{DenSimp})$ ,
- $W$  is  $\text{NumSimp} // \text{DenSimp}$ ,
- $N$  is  $\text{NumSimp} \bmod \text{DenSimp}$ ,
- $D$  is  $\text{DenSimp}$