

Diffraction Patterns

Here you can see the relation between the factors in the intensity formulae

```
> restart:
```

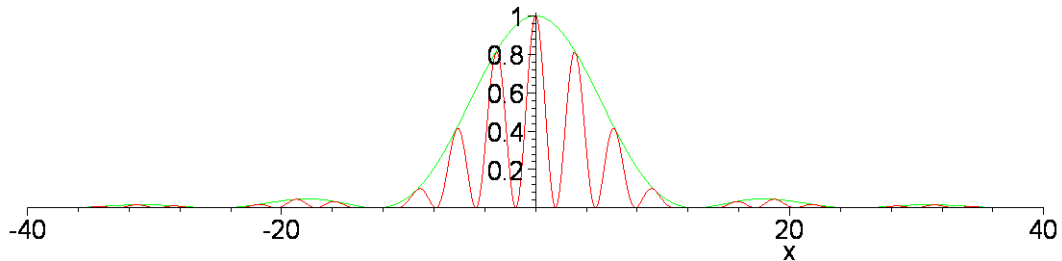
```
> y:=x/m: f:=cos(x)^2*(sin(y)/y)^2: g:=(sin(y)/y)^2:
```

```
> F:=(sin(N*x)/sin(x))^2*(sin(y)/y)^2/N^2:
```

```
h:=(sin(N*x)/sin(x))^2/N^2:
```

Double Slit

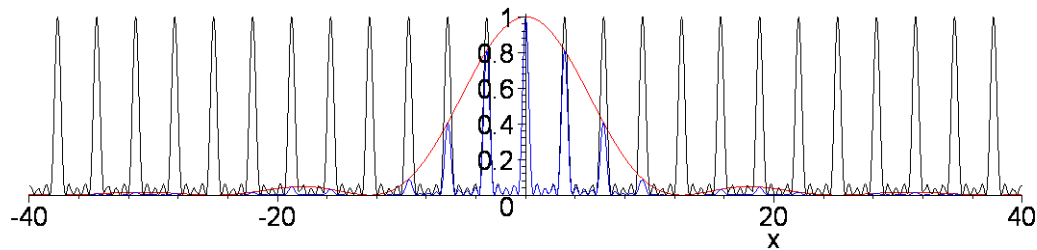
```
> m:=4: plot({f,g},x=-10*m..10*m,numpoints=200);
```



N Slits

```
> N:=5: m:=4:
```

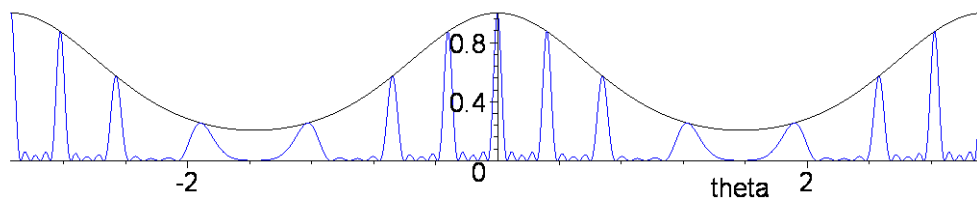
```
plot([F,h,g],x=-10*m..10*m,numpoints=200,color=[blue,black,red]);
```



As Function of Theta

```
> N:=5: m:=5:x:=10*sin(theta):
```

```
plot([F,g],theta=-Pi..Pi,0..1,numpoints=400,color=[blue,black,red]);
```



```
>
```