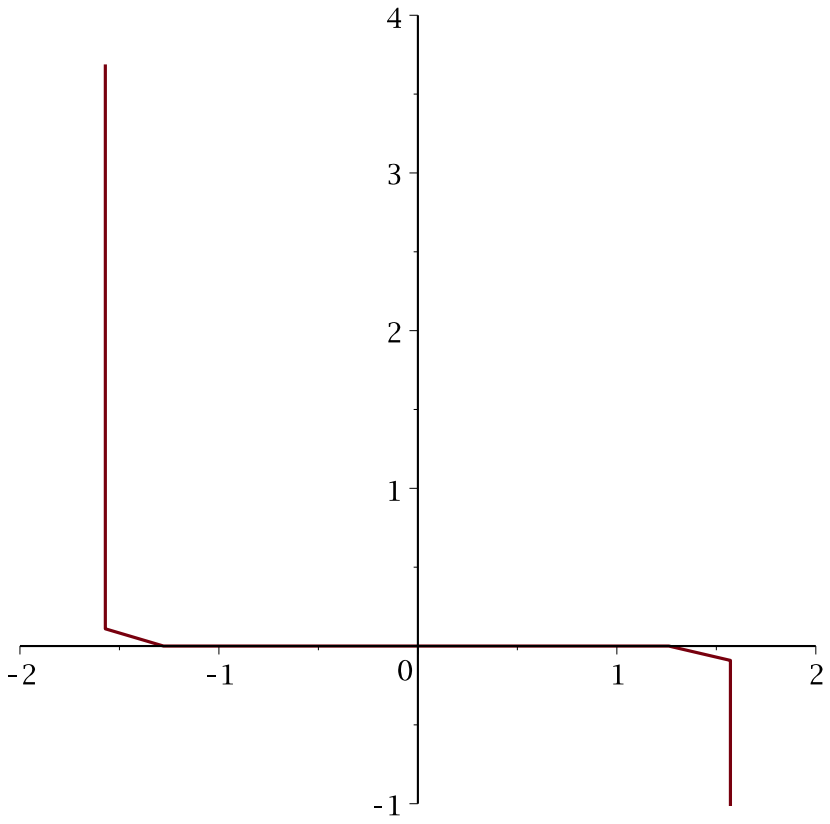
```
> with(plots):with(plottools):
```

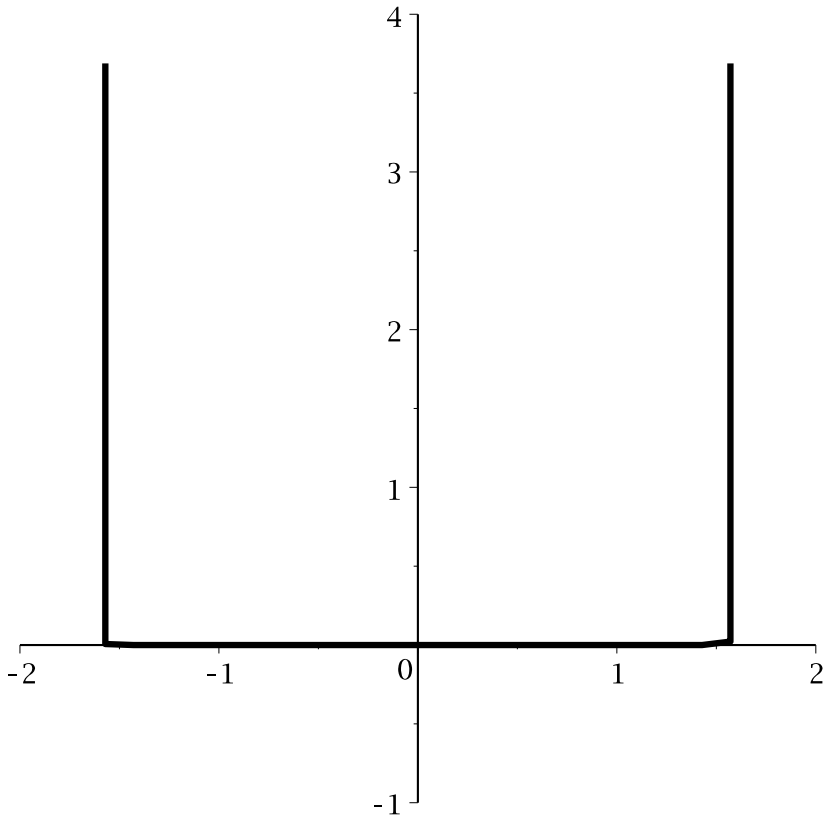
Here we study the arcsine function on the upper half of the complex plan. First, we look at the image of the real line form -20 to 20.
See below. This is incorrect. Well, the program is making a choice on which branches of arcsine to use that we do not like.

```
> complexplot(arcsin(x),x=-20..20,view=[-2..2,-1..4]);
```



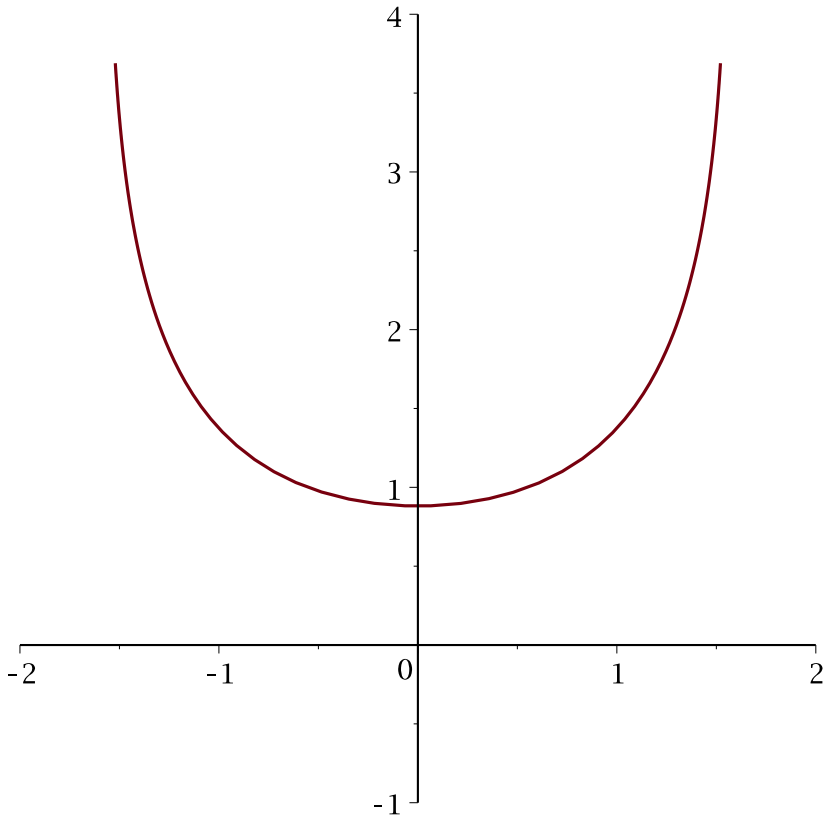
Here I did a rather crude fix.

```
> plot([Re(arcsin(x)),'sign(-x)'*Im(arcsin(x)),x=-20..20],view=[-2.
  .2,-1..4],numpoints=1000,thickness=3,color=black);
```



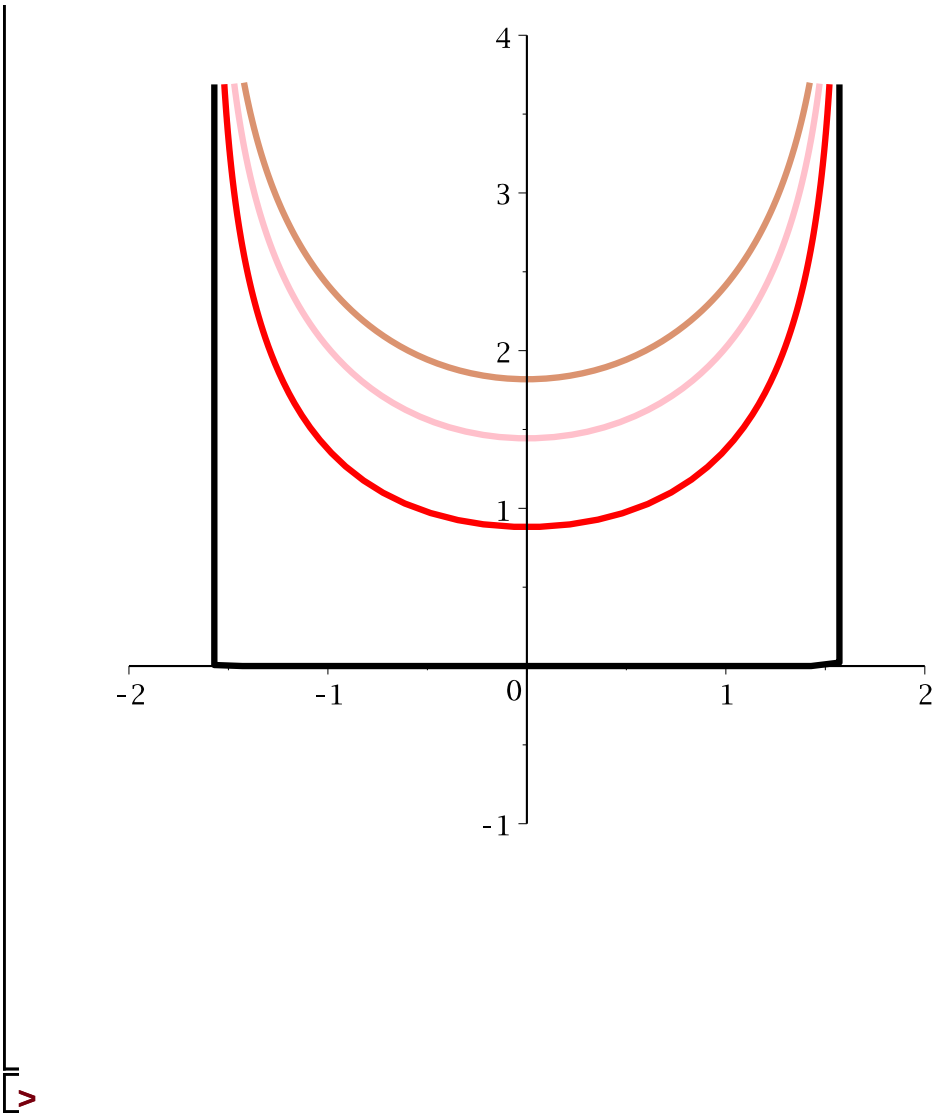
Weirdly, this problem does not arise when looking at images of horizonal lines in the upper half plane.

```
> complexplot(arcsin(x+I),x=-20..20,view=[-2..2,-1..4]);
```



Finally, we will plot the images of severel lines on one plot.

```
> AS0:=plot([Re(arcsin(x)),'sign(-x)'*Im(arcsin(x)),x=-20..20],
  view=[-2..2,-1..4],numpoints=1000,thickness=3,color=black):
> AS1:=complexplot(arcsin(x+I),x=-20..20,view=[-2..2,-1.
  .4],thickness=3,color=red) :
> AS2:=complexplot(arcsin(x+2*I),x=-20..20,view=[-2..2,-1..4],
  thickness=3,color=pink):
> AS3:=complexplot(arcsin(x+3*I),x=-20..20,view=[-2..2,-1..4],
  thickness=3,color=tan):
> display(AS0,AS1,AS2,AS3);
```


4
3
2
1
-1
-2
-1
0
1
2