

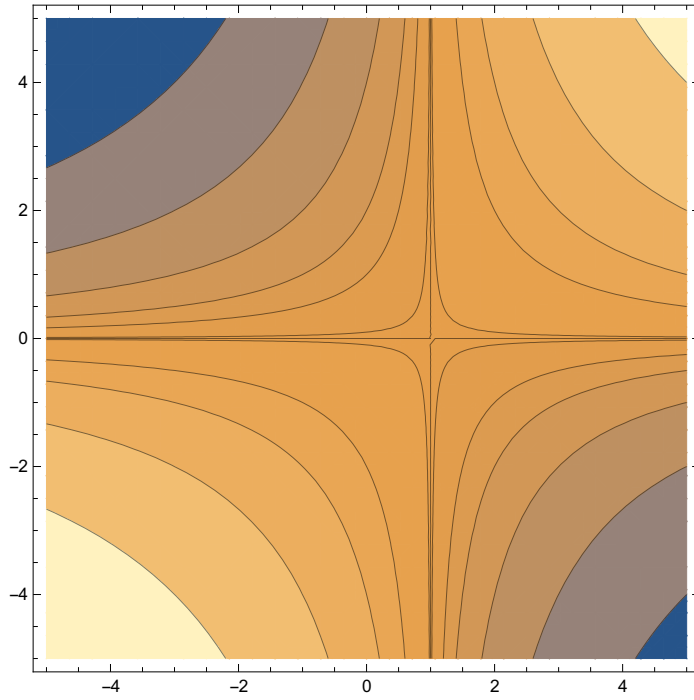
In[1]=

```
g[z_] := -I z^2 / 2 + I z
```

In[2]=

```
ContourPlot[Re[g[x + I y]], {x, -5, 5}, {y, -5, 5},  
Contours -> {-16, -8, -4, -2, -1, -0.1, 0, 0.1, 2, 4, 8, 16}]
```

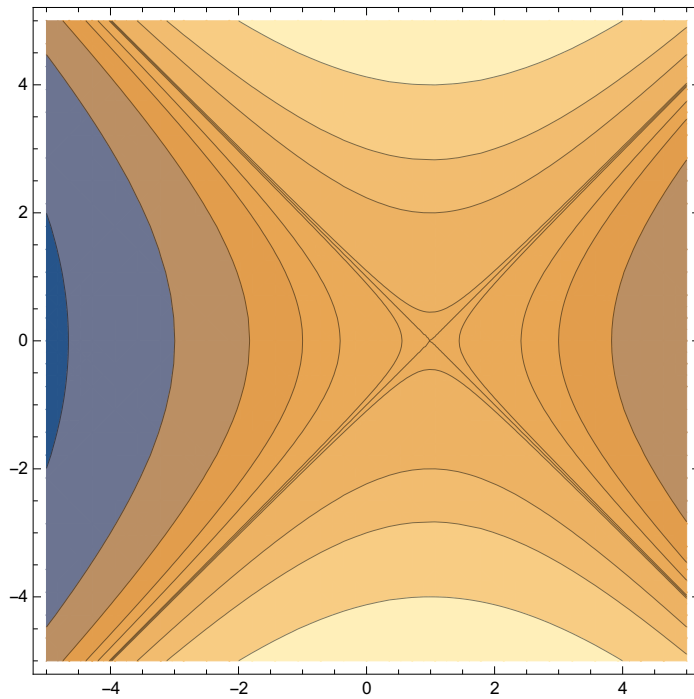
Out[2]=



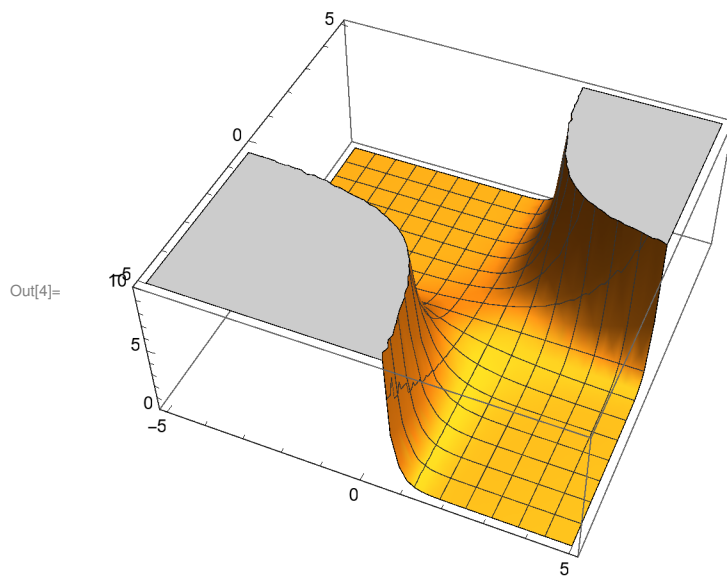
In[3]=

```
ContourPlot[Im[g[x + I y]], {x, -5, 5}, {y, -5, 5},  
Contours -> (1 / 2 + {-16, -8, -4, -2, -1, -0.1, 0, 0.1, 2, 4, 8, 16})]
```

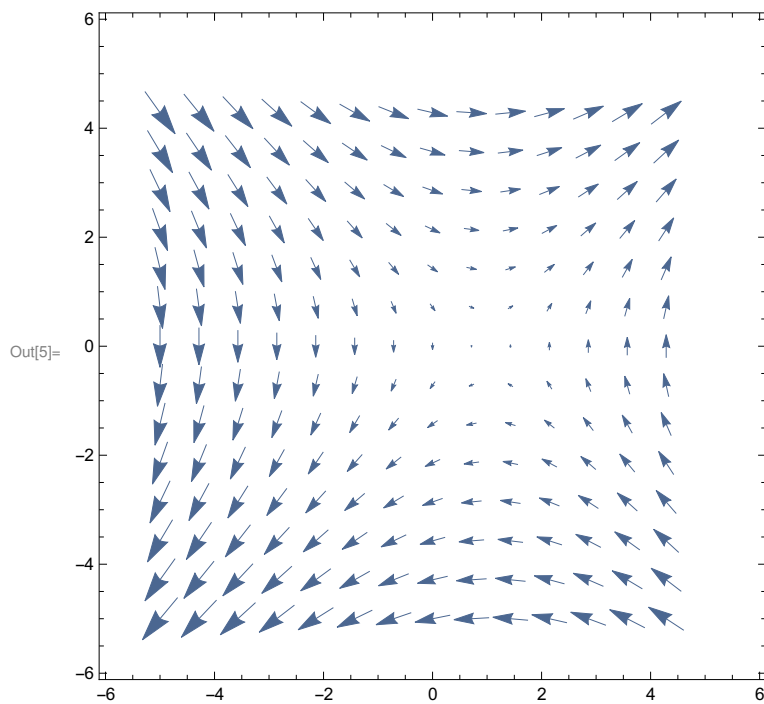
Out[3]=



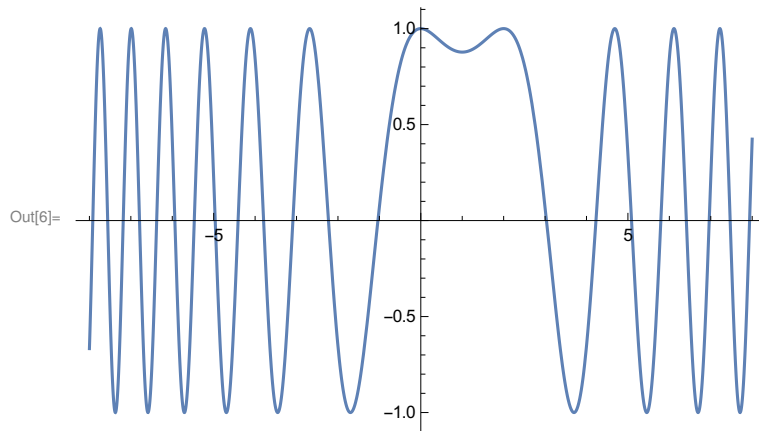
```
In[4]:= Plot3D[Abs[Exp[g[x + I y]]], {x, -5, 5}, {y, -5, 5}, PlotRange -> {0, 10}]
```



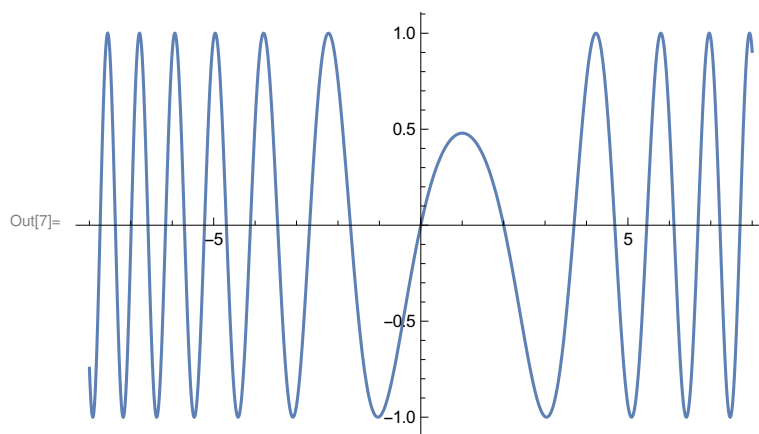
```
In[5]:= VectorPlot[{y, x - 1}, {x, -5, 5}, {y, -5, 5}]
```



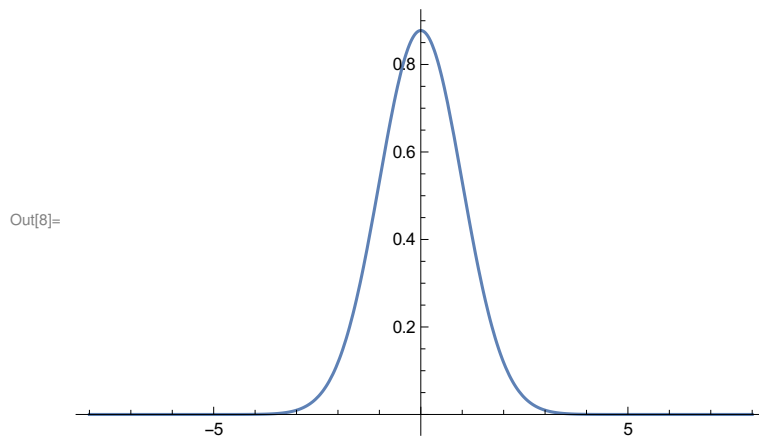
In[6]:= `Plot[Re[Exp[g[x]]], {x, -8, 8}, PlotRange -> All]`



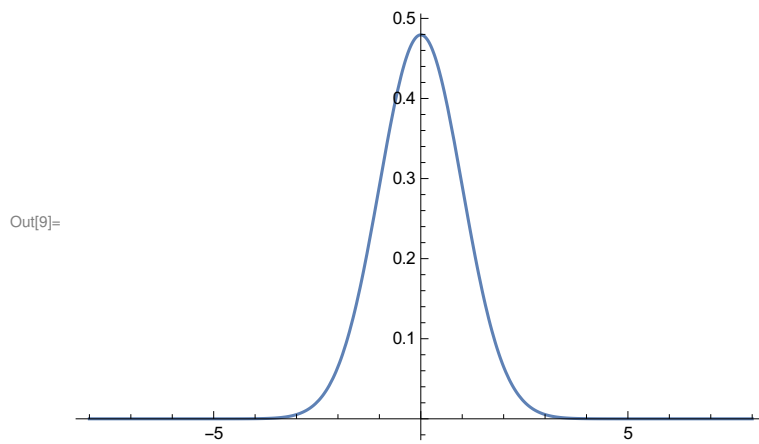
In[7]:= `Plot[Im[Exp[g[x]]], {x, -8, 8}, PlotRange -> All]`



In[8]:= `Plot[Re[Exp[g[1 + Exp[-I Pi / 4] x]]], {x, -8, 8}, PlotRange -> All]`



```
In[9]:= Plot[Im[Exp[g[1 + Exp[-I Pi / 4] x]]], {x, -8, 8}, PlotRange -> All]
```



```
In[10]:= N[Sqrt[2 Pi] Exp[I / 2 * (1 - Pi / 2)]]
```

```
Out[10]= 2.40523 - 0.705715 i
```

```
In[11]:= F[r_] := NIntegrate[Exp[g[x]], {x, -r, r}]
```

```
In[15]:= F[20]
```

```
Out[15]= 2.36726 - 0.689887 i
```

```
In[14]:= Plot[{Re[F[x]], 2.405 + 2 x / (x^2 - 1), 2.405 - 2 x / (x^2 - 1)}, {x, 1, 20}]
```

