```
>
> q[1]:=3;
```

$$q_1 := 3$$

```
> q[2]:=10;
```

$$q_2 := 10$$

```
> n:=2;
```

$$n := 2$$

```
> com:=(x,y)->x+I*y;
```

$$com := (x, y) \to x + I\, y$$

```
> com(1,2);
```

$$1 + 2\, I$$

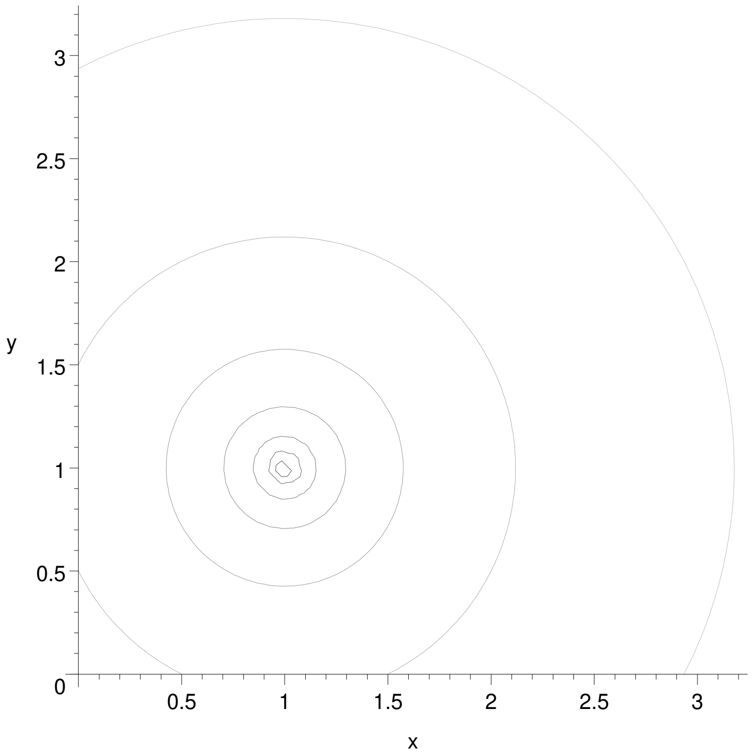
```
> z[1]:=com(1,1);
```

$$z_1 := 1 + I$$

```
> z[2]:=com(3,2);
```

$$z_2 := 3 + 2\, I$$

```
> contourplot(Re(log(com(x,y)-z[1])),x=0..4,y=0..4,grid=[70,70]);
```




```
> phi := (z) -> sum(q[i]*log(z-z[i]), i=1..n);
```

$$\phi := z \to \sum_{i=1}^{n} q_i \log(z - z_i)$$

```
>
> phi(com(1,0));
```

$$3\ln(1-1_1)+10\ln(1-1_2)$$

```
> n;
```

$$2$$

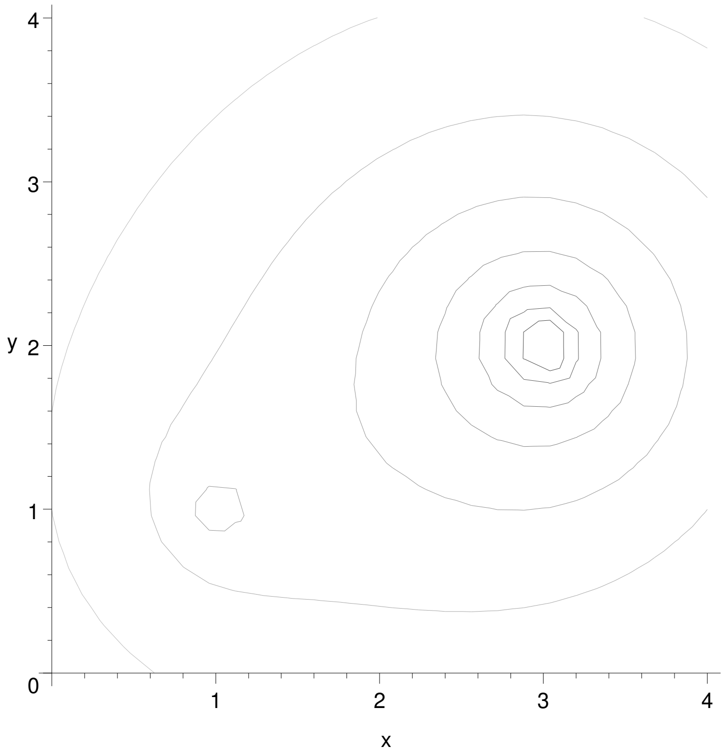
```
> phi := (u) -> sum(q[i]*log(u-z[i]), i=1..n);
```

$$\phi := u \to \sum_{i=1}^{n} q_i \log(u-z_i)$$

```
> phi(com(1,0));
```

$$-\frac{3}{2} I\pi + 10\ln(-2-2I)$$

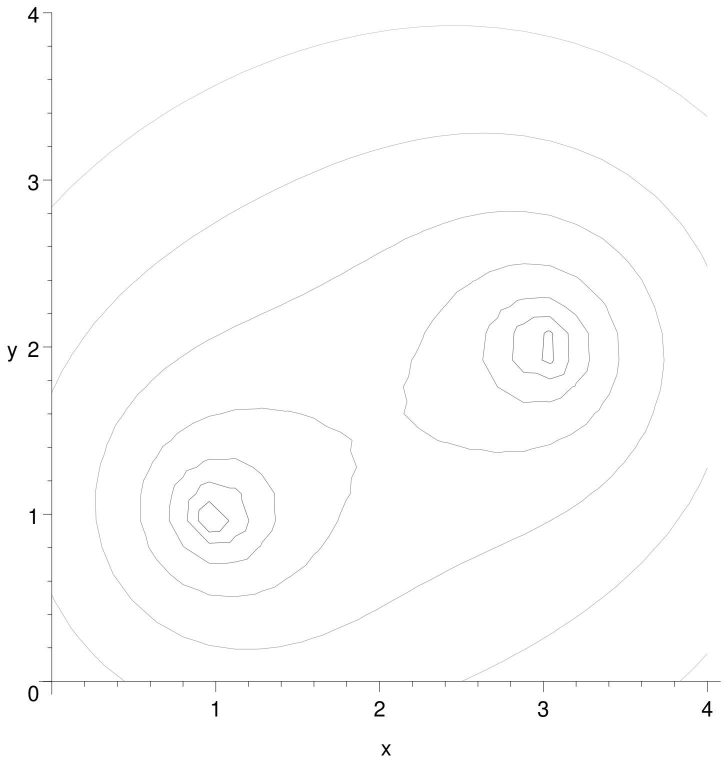
```
> contourplot(Re(phi(com(x,y))),x=0..4,y=0..4);
```



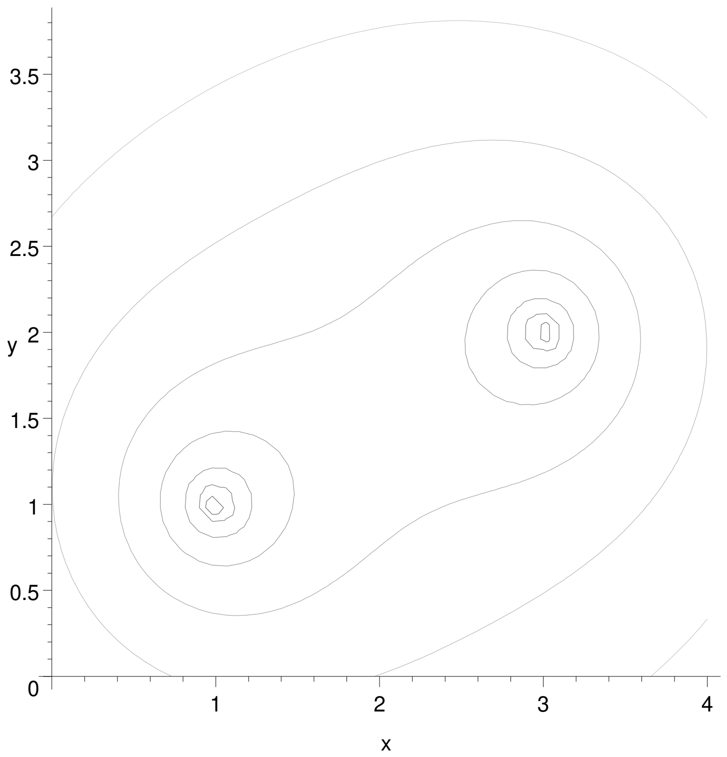

```
> q[1]:=10;
```

$$q_1 := 10$$

```
> contourplot(Re(phi(com(x,y))),x=0..4,y=0..4);
```



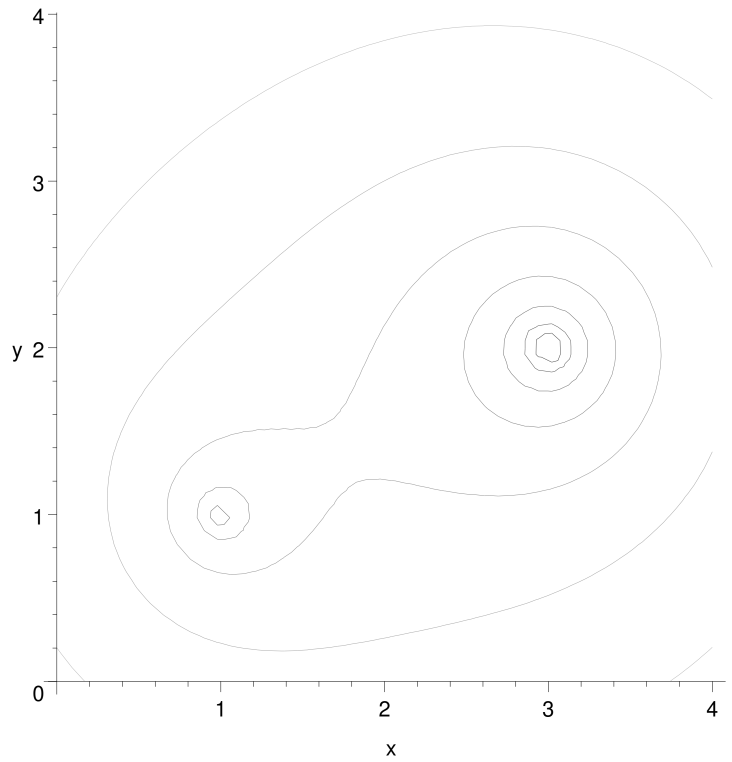

```
> contourplot(Re(phi(com(x,y))),x=0..4,y=0..4,grid=[50,50]);
```



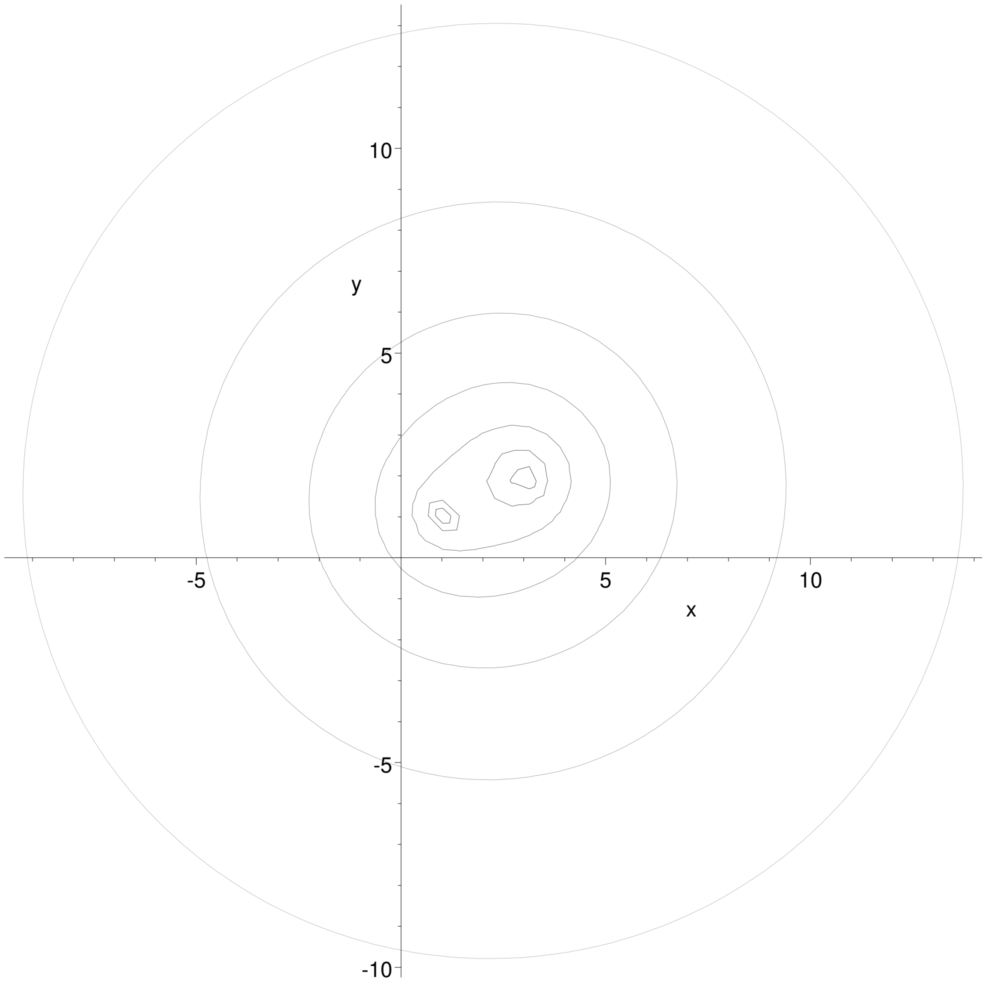

```
> q[1]:=3;
```

$$q_1 := 3$$

```
> q[2]:=5:
> contourplot(Re(phi(com(x,y))),x=0..4,y=0..4,grid=[50,50]);
```




```
> contourplot(Re(phi(com(x,y))),x=-10..15,y=-10..15,grid=[60,60]);
```




```
> contourplot(Re(phi(com(x,y))),x=-10..15,y=-10..15);
> plotsetup(ps,plotoutput=`z.ps`);
> contourplot(Re(phi(com(x,y))),x=-10..15,y=-10..15);
>
```