

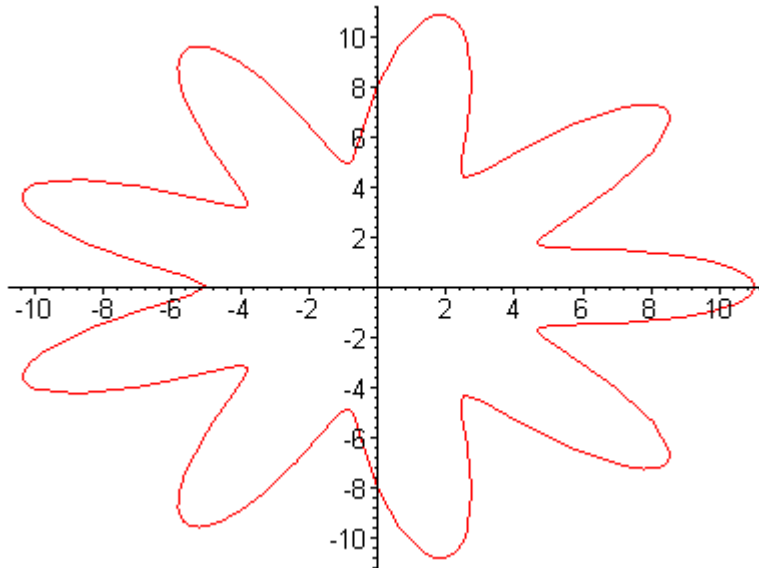
Art Gallery II

> **restart; with(plots):**

> **a:=8: b:=3: c:=1: d:=0: m:=9: n:=1:**

r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):

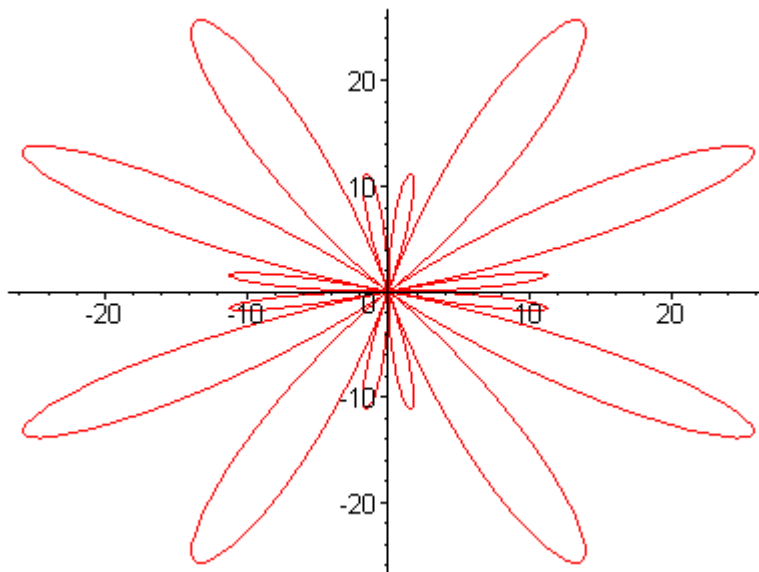
polarplot(r, 0..2*Pi);



> **a:=0: b:=8: c:=0: d:=4: m:=6: n:=4:**

r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):

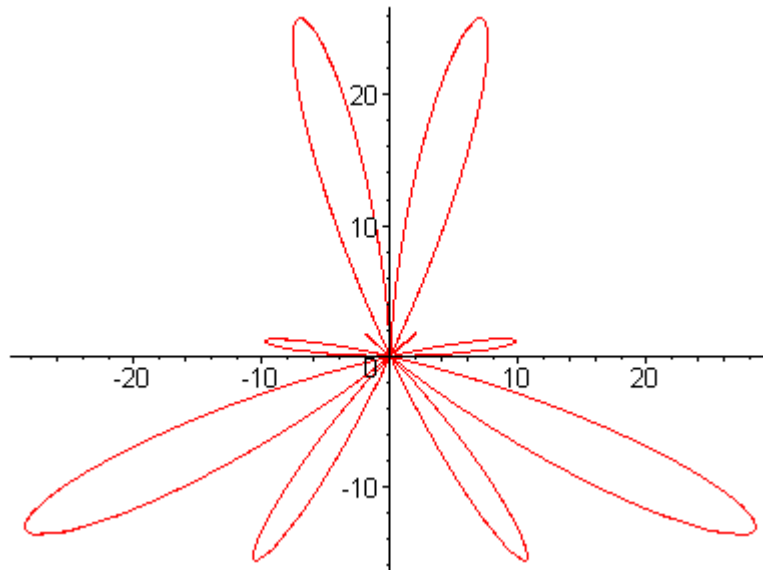
polarplot(r, 0..2*Pi);



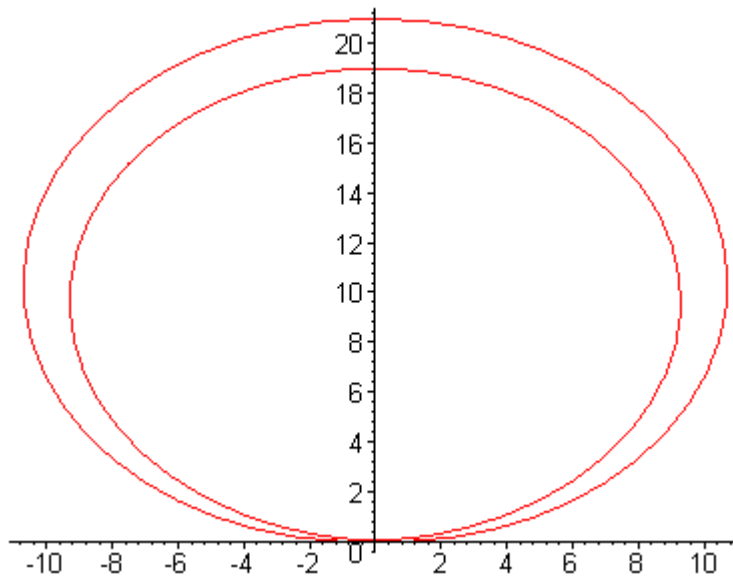
> **a:=0: b:=8: c:=0: d:=4: m:=7: n:=4:**

r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):

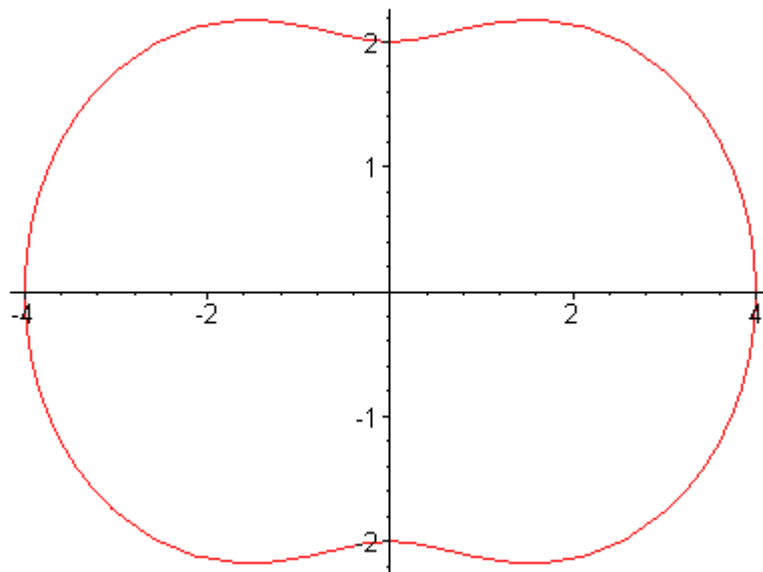
polarplot(r, 0..2*Pi);



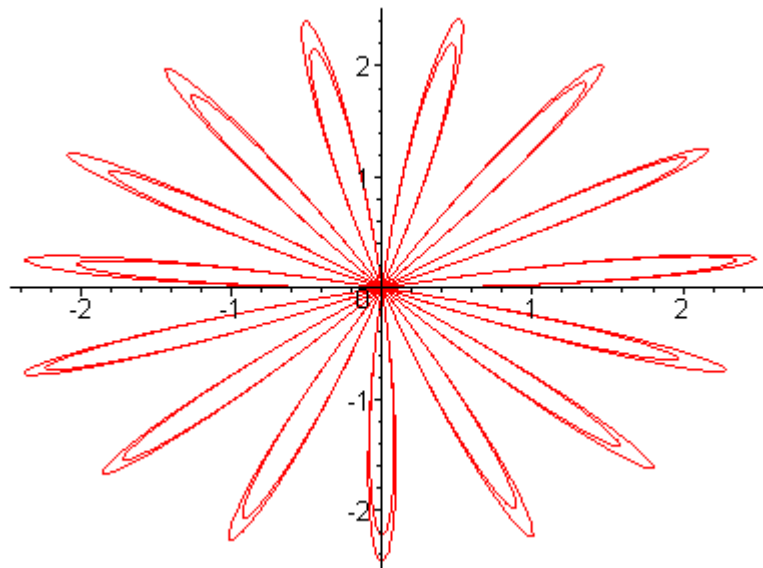
```
> a:=1: b:=0: c:=1: d:=20: m:=1: n:=1:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



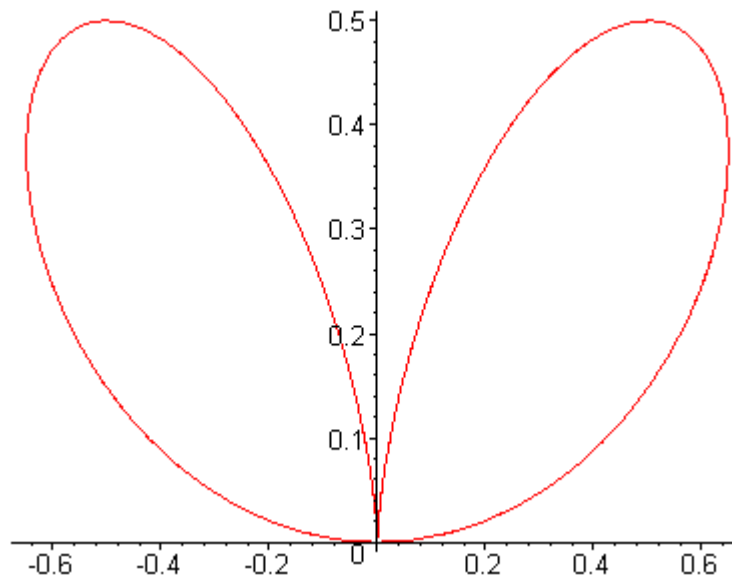
```
> a:=3: b:=1: c:=1: d:=0: m:=2: n:=1:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



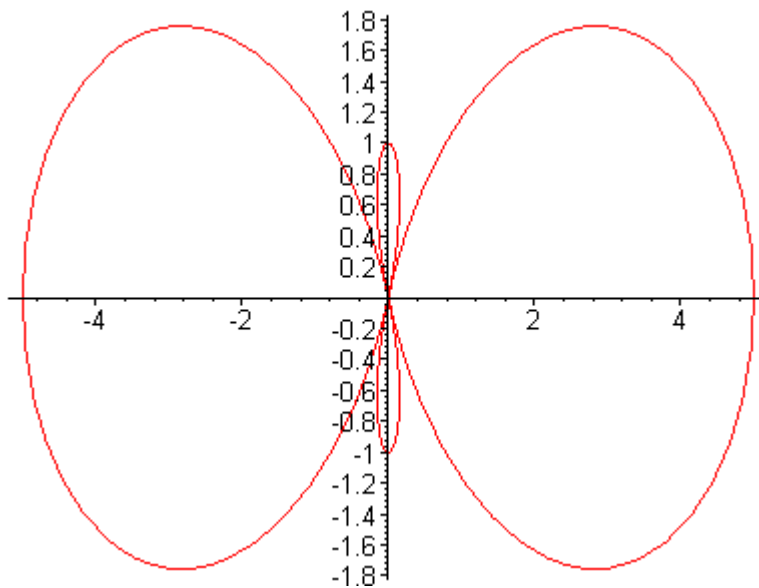
```
> a:=0: b:=5: c:=0: d:=0.5: m:=.1: n:=15:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



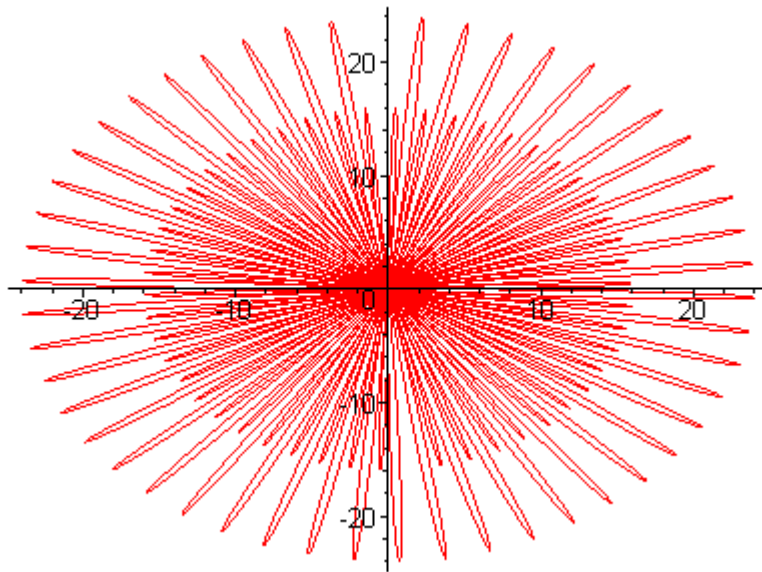
```
> a:=0: b:=1: c:=0: d:=1: m:=1: n:=2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



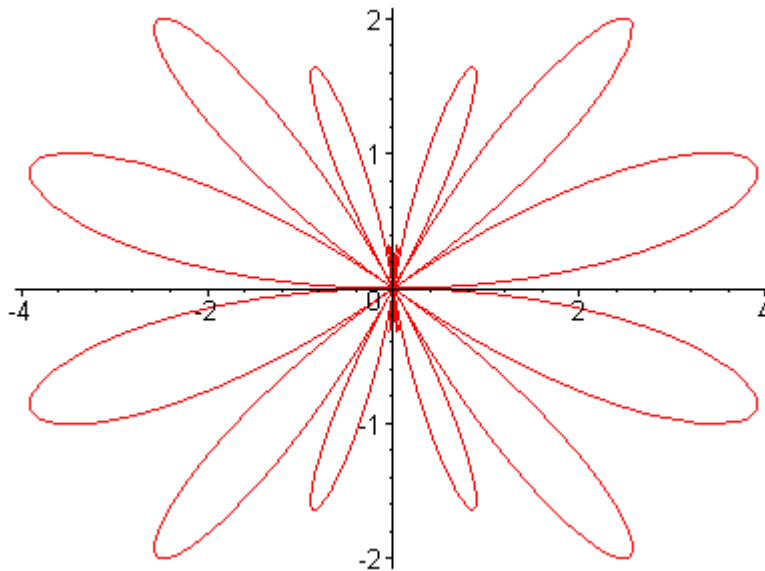
```
> a:=2: b:=3: c:=1: d:=0: m:=2: n:=1:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



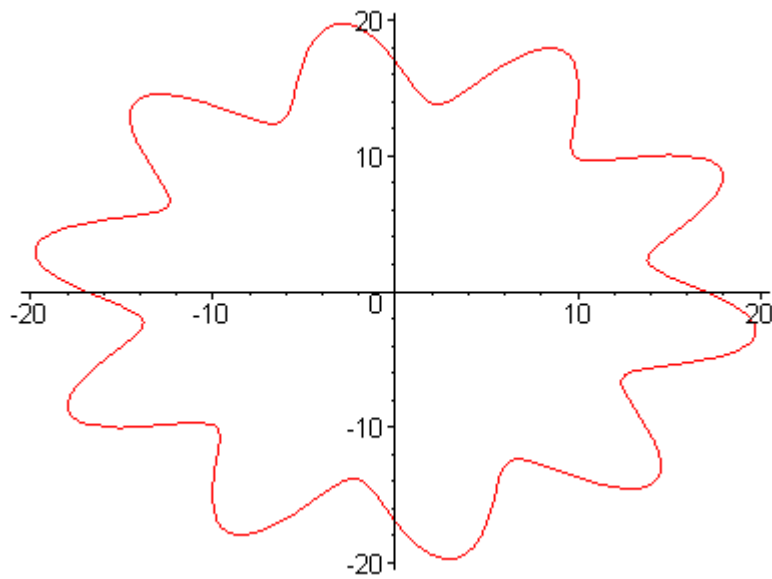
```
> a:=1: b:=0: c=-4: d:=20: m:=1: n:=50:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



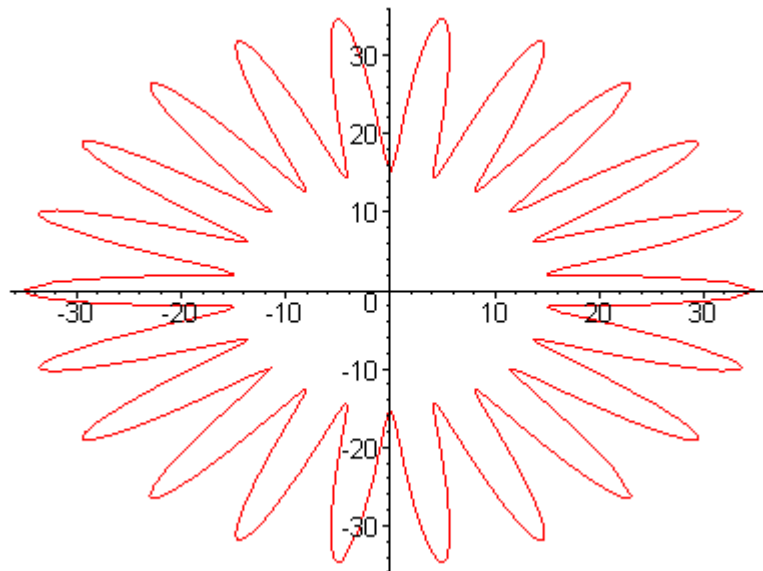
```
> a:=0: b:=9: c:=0: d:=.45632: m:=1: n:=7:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



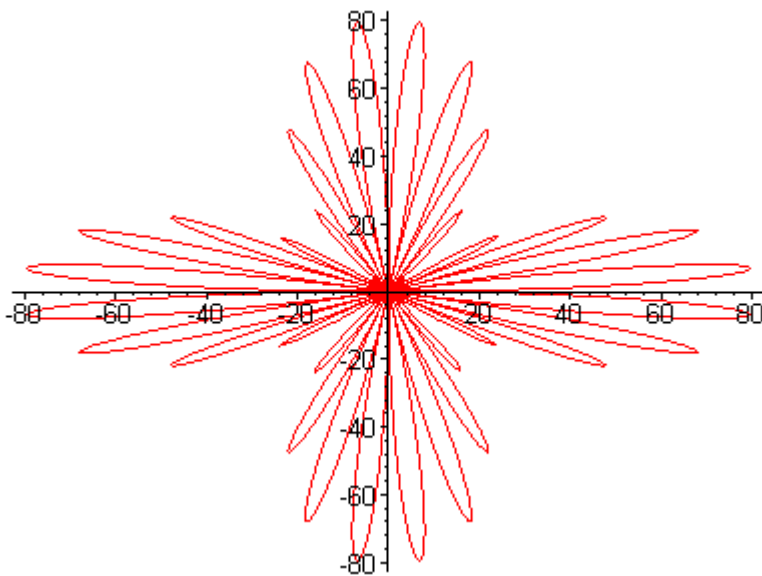
```
> a:=1: b:=0: c:=17: d:=3: m:=1: n:=-10:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



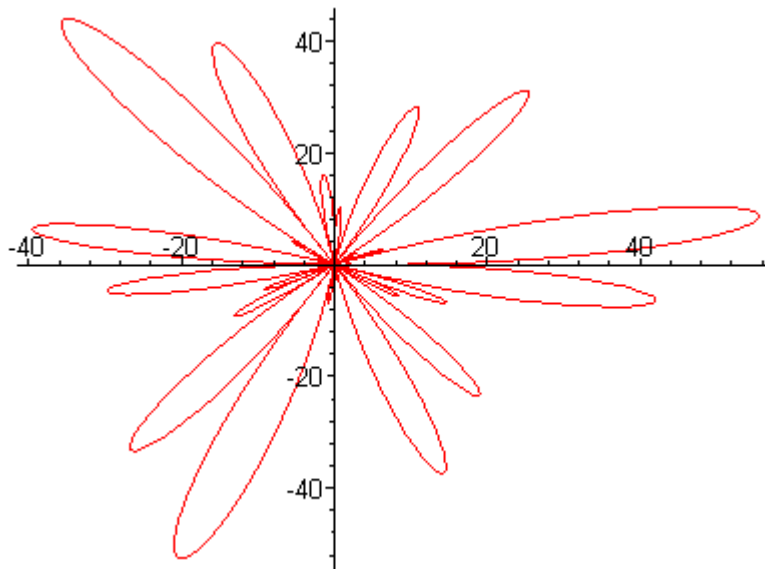
```
> a:=25: b:=10: c:=1: d:=0: m:=22: n:=1:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



```
> a:=0: b:=9: c:=0: d:=9: m:=2: n:=18:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```

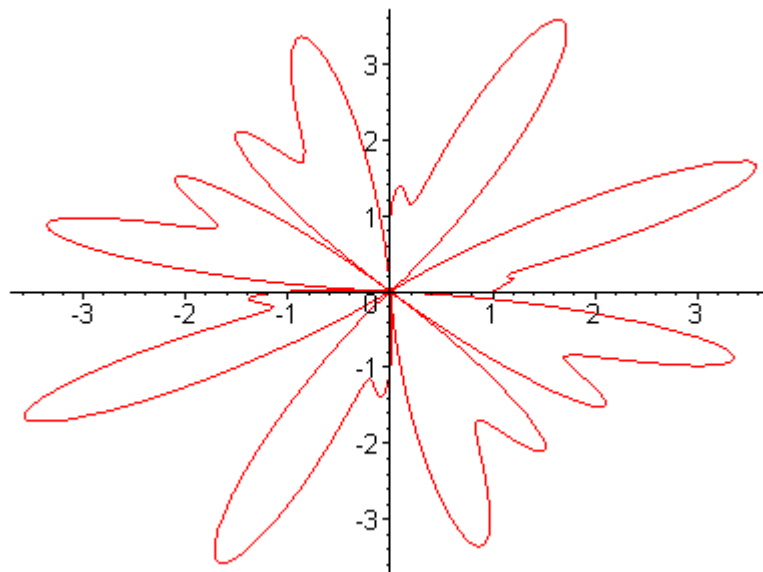


```
> a:=1: b:=8: c:=1: d:=6: m:=3: n:=9:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```

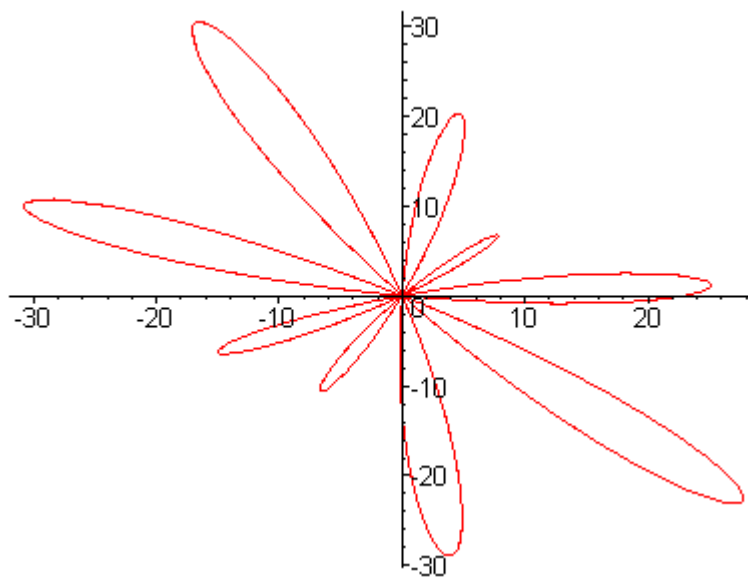


Interesting, but not as in assignment:

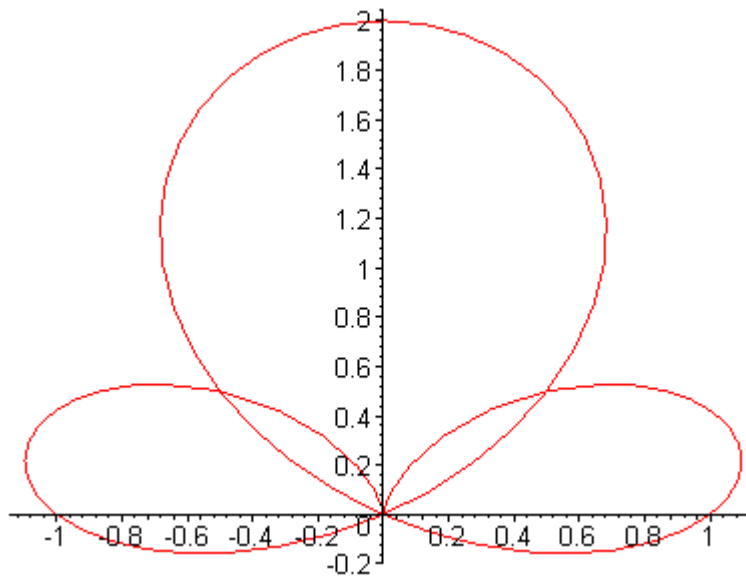
```
> a:=0: b:=1: c:=0: d:=3: m:=14: n:=4:
r := theta -> (a+b*cos(m*theta))+c+d*sin(n*theta):
polarplot(r, 0..2*Pi);
```



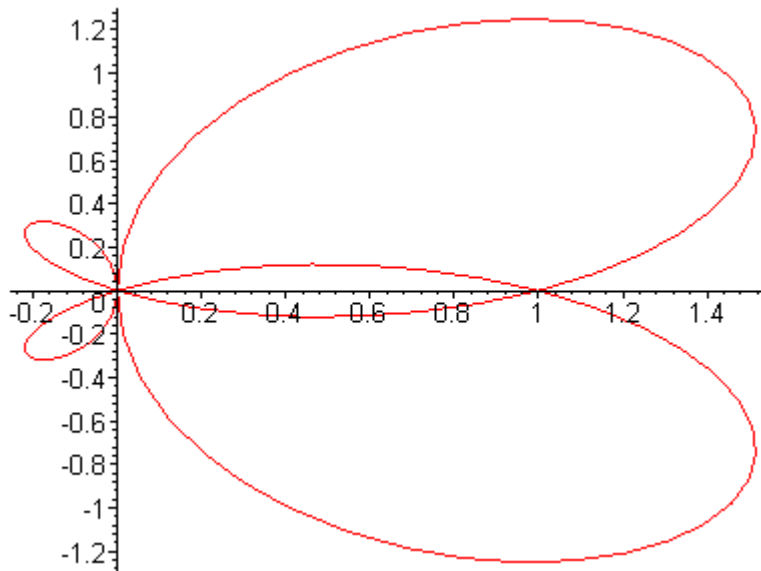
```
> a:=0: b:=23: c:=0: d:=13: m:=9: n:=7:
r := theta -> (a+b*cos(m*theta))+(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



```
> a:=0: b:=1: c:=0: d:=1: m:=2: n:=1:
r := theta -> (a+b*cos(m*theta))+(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



```
> a:=0: b:=1: c:=0: d:=1: m:=1: n:=2:
r := theta -> (a+b*cos(m*theta))+(c+d*sin(n*theta)):
polarplot(r, 0..2*Pi);
```



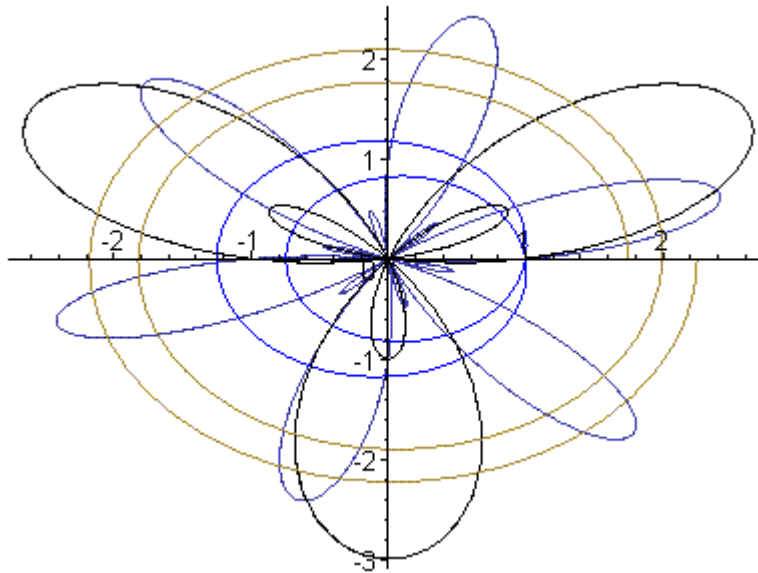
And now some absolutely terrific graphs:

```
> a:=1: b:=0: c:=1: d:=1/4: m:=1/2: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p1:=polarplot(r, -2*Pi..2*Pi, color=blue):
a:=1: b:=0: c:=1: d:=2: m:=1/2: n:=3:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p2:=polarplot(r, -2*Pi..2*Pi, color=black):
a:=1: b:=0: c:=1: d:=(3/2): m:=1/2: n:=6:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p3:=polarplot(r, -2*Pi..2*Pi, color=navy):
a:=1: b:=0: c:=2: d:=(1/4): m:=1/2: n:=1/4:
```

```

r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p4:=polarplot(r, -2*Pi..2*Pi, color=sienna):
display({p1,p2,p3,p4});

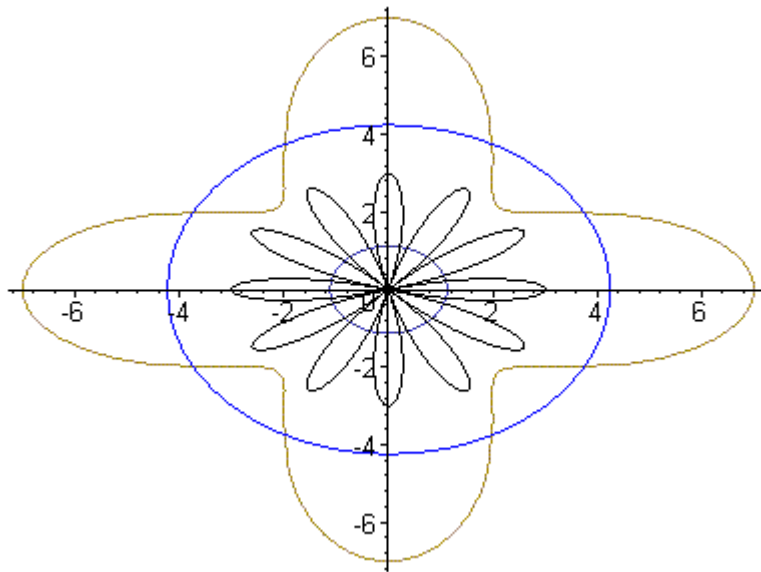
```



```

> a:=4: b:=1/4: c:=1: d:=0: m:=1/8: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p1:=polarplot(r, -Pi..Pi, color=blue):
a:=0: b:=3: c:=1: d:=0: m:=6: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p2:=polarplot(r, -Pi..Pi, color=black):
a:=1: b:=1/8: c:=1: d:=0: m:=1/8: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p3:=polarplot(r, -Pi..Pi, color=navy):
a:=5: b:=2: c:=1: d:=0: m:=4: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p4:=polarplot(r, -Pi..Pi, color=sienna):
display({p1,p2,p3,p4});

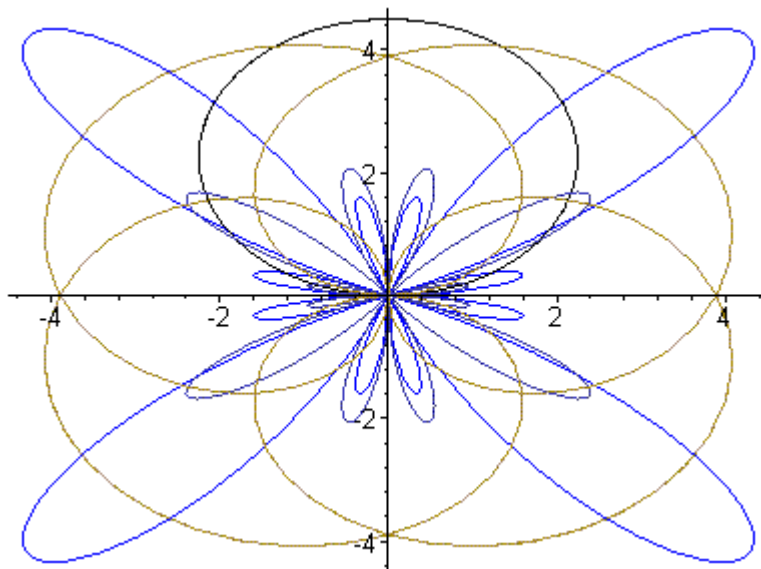
```



```

> a:=0: b:=2: c:=0: d:=3: m:=4: n:=2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p1:=polarplot(r, -Pi..Pi, color=blue):
a:=0: b:=3: c:=0: d:=3: m:=1/2: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p2:=polarplot(r, -Pi..Pi, color=black):
a:=0: b:=3/2: c:=0: d:=2: m:=5: n:=3:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p3:=polarplot(r, -Pi..Pi, color=navy):
a:=0: b:=3: c:=0: d:=3: m:=1/3: n:=1/3:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p4:=polarplot(r, -4*Pi..4*Pi, color=sienna):
display({p1,p2,p3,p4});

```



```

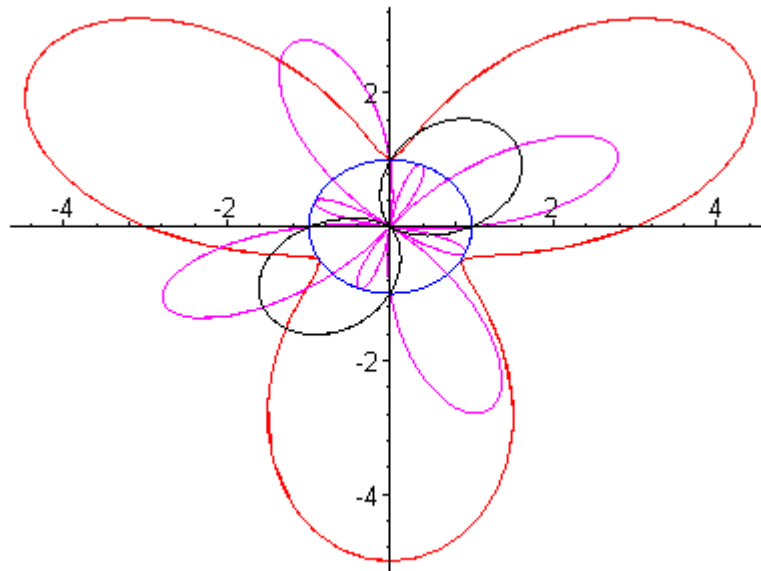
> a:=1: b:=0: c:=1: d:=0: m:=1/2: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):

```

```

p1:=polarplot(r, -2*Pi..2*Pi, color=blue):
a:=1: b:=0: c:=1: d:=1: m:=1/2: n:=2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p2:=polarplot(r, -2*Pi..2*Pi, color=black):
a:=1: b:=0: c:=3: d:=2: m:=1/2: n:=3:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p3:=polarplot(r, -2*Pi..2*Pi, color=red):
a:=1: b:=0: c:=1: d:=2: m:=1/2: n:=4:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p4:=polarplot(r, -2*Pi..2*Pi, color=magenta):
display({p1,p2,p3,p4});

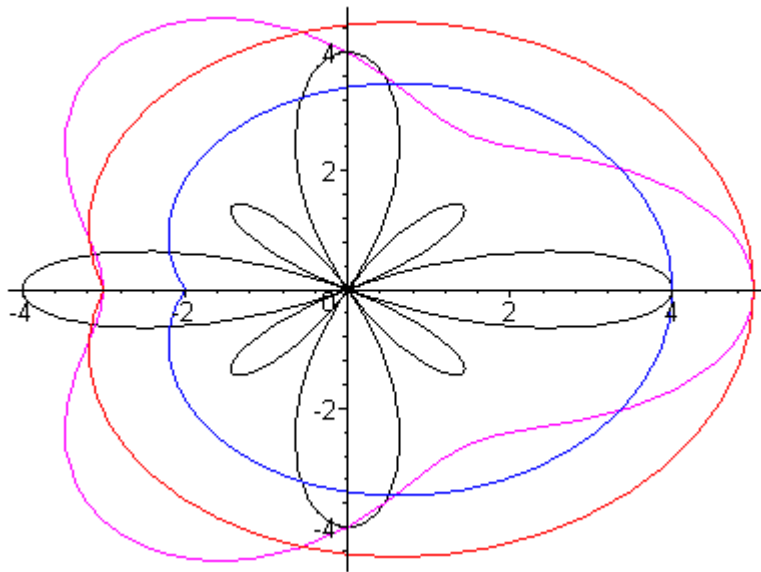
```



```

> a:=2: b:=2: c:=1: d:=0: m:=1/2: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p1:=polarplot(r, -Pi..Pi, color=blue):
a:=1: b:=3: c:=1: d:=0: m:=4: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p2:=polarplot(r, -Pi..Pi, color=black):
a:=1: b:=4: c:=1: d:=0: m:=1/3: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p3:=polarplot(r, -Pi..Pi, color=red):
a:=4: b:=1: c:=1: d:=0: m:=3: n:=1/2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p4:=polarplot(r, -Pi..Pi, color=magenta):
display({p1,p2,p3,p4});

```



```

> a:=0: b:=1: c:=0: d:=1: m:=4: n:=2:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p1:=polarplot(r, -Pi..Pi, color=blue):
a:=0: b:=2: c:=0: d:=2: m:=2: n:=4:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p2:=polarplot(r, -Pi..Pi, color=black):
a:=0: b:=1: c:=0: d:=3: m:=1/4: n:=3:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p3:=polarplot(r, -Pi..Pi, color=red):
a:=0: b:=1: c:=0: d:=2: m:=1/2: n:=1/3:
r := theta -> (a+b*cos(m*theta))*(c+d*sin(n*theta)):
p4:=polarplot(r, -8*Pi..8*Pi, color=magenta):
display({p1,p2,p3,p4});

```

