

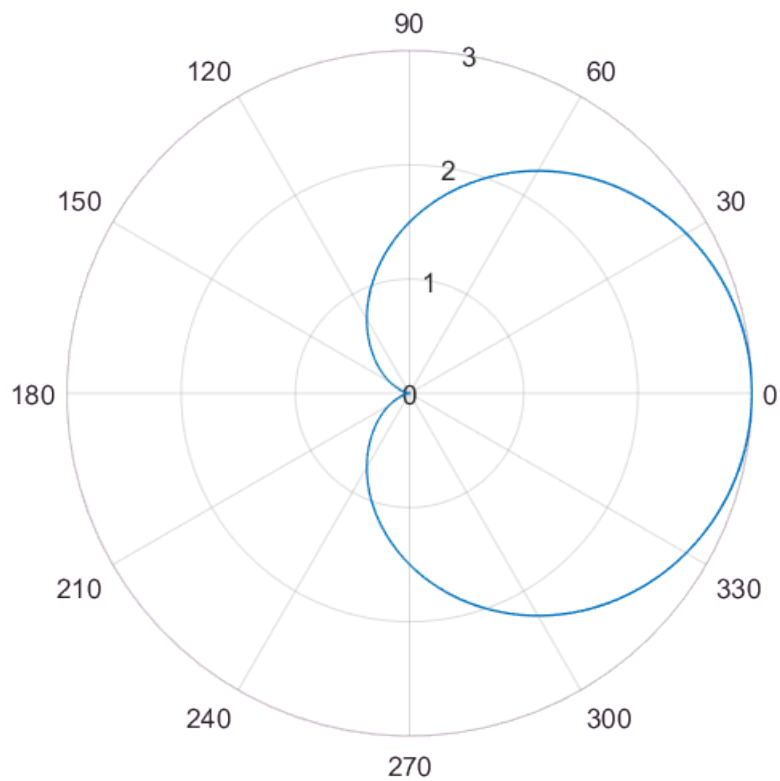
Polar Curves: (Use polarplot function to plot polar curves)

- $r = \frac{a}{2} (1 + \cos\theta)$

```
clear  
theta = 1:0.1:1000;  
r = @(a) a./2.*(1 + cos(theta))
```

r = function_handle with value:
@(a)a./2.*(1+cos(theta))

```
polarplot(theta,r(3))
```

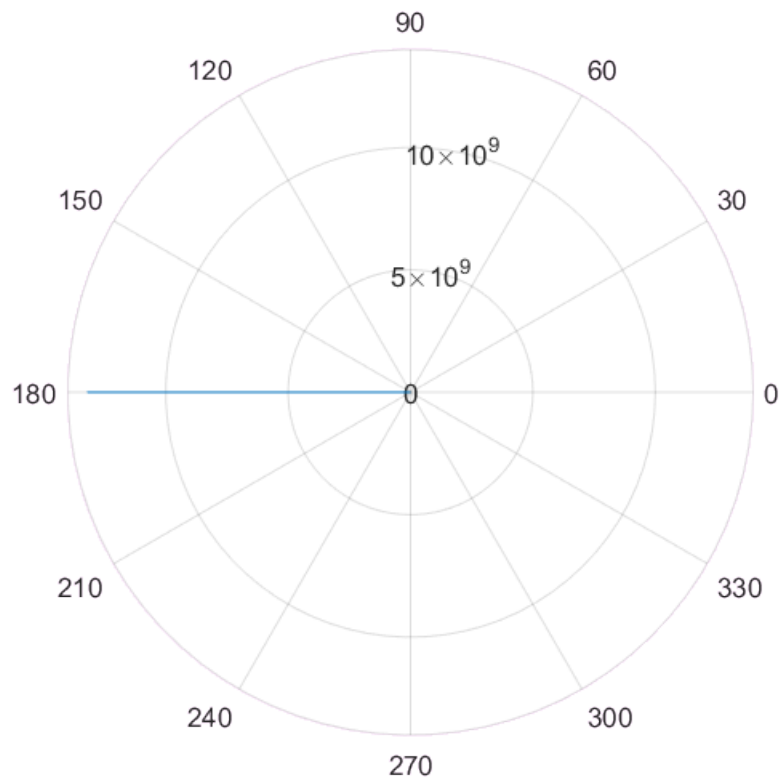


- $r = \frac{2a}{(1 + \cos\theta)}$

```
theta = 1:0.1:1000;  
r = @(a) 2.*a./(1 + cos(theta))
```

r = function_handle with value:
@(a)2.*a./(1+cos(theta))

```
polarplot(theta,r(3))
```



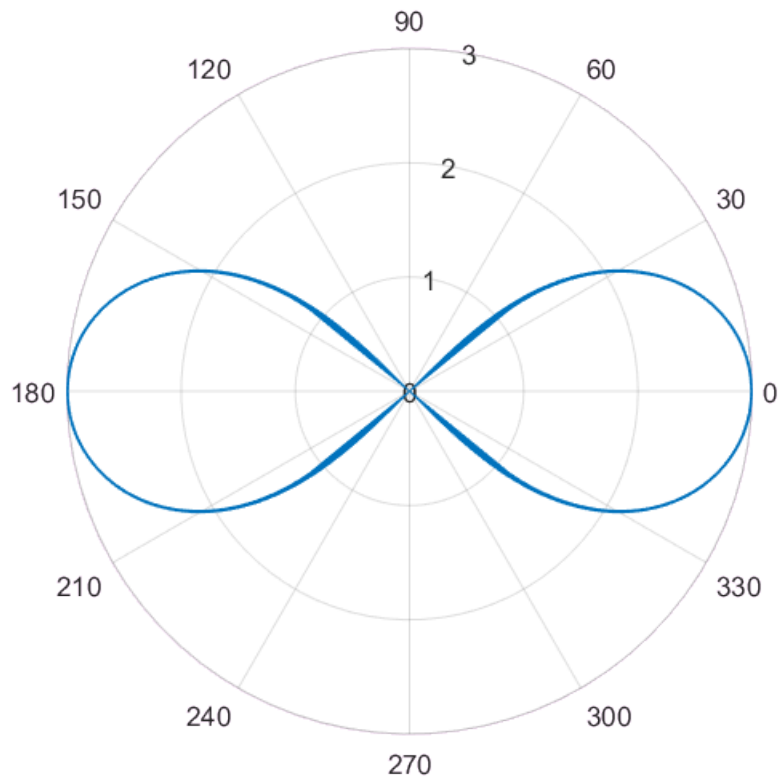
- $r^2 = a^2 \cos 2\theta$

```
theta = 1:0.1:1000;
r = @(a) sqrt(a.^2 .* cos(2 .* theta))
```

```
r = function_handle with value:
    @(a)sqrt(a.^2.*cos(2.*theta))
```

```
polarplot(theta,r(3))
```

Warning: Imaginary parts of complex X and/or Y arguments ignored

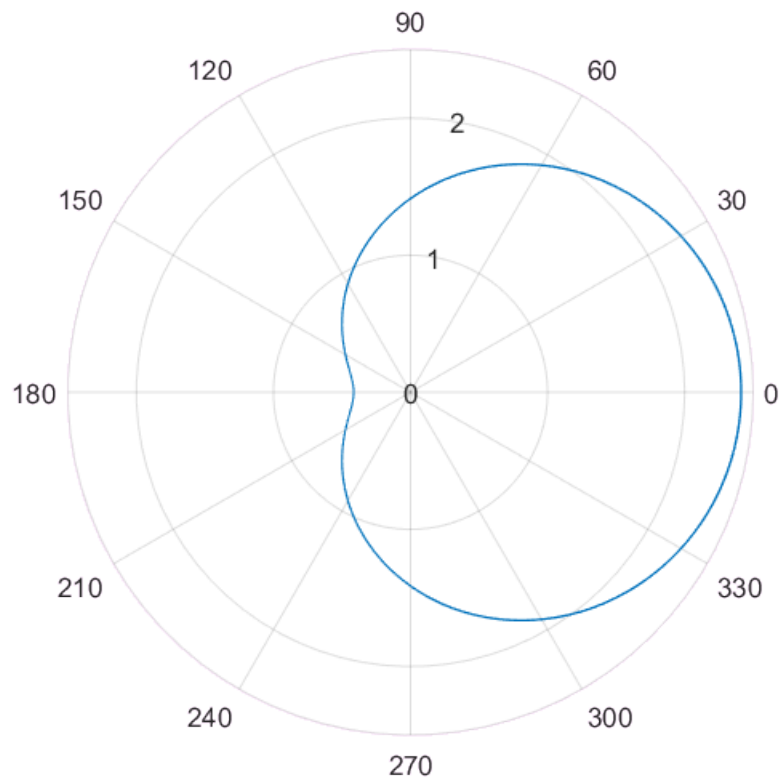


- $r = \sqrt{2} + \cos\theta$

```
theta = 1:0.1:1000;
r = sqrt(2) + cos(theta)
```

```
r =
    1.9545    1.8678    1.7766    1.6817    1.5842    1.4850    1.3850    1.2854 ...
```

```
polarplot(theta,r)
```

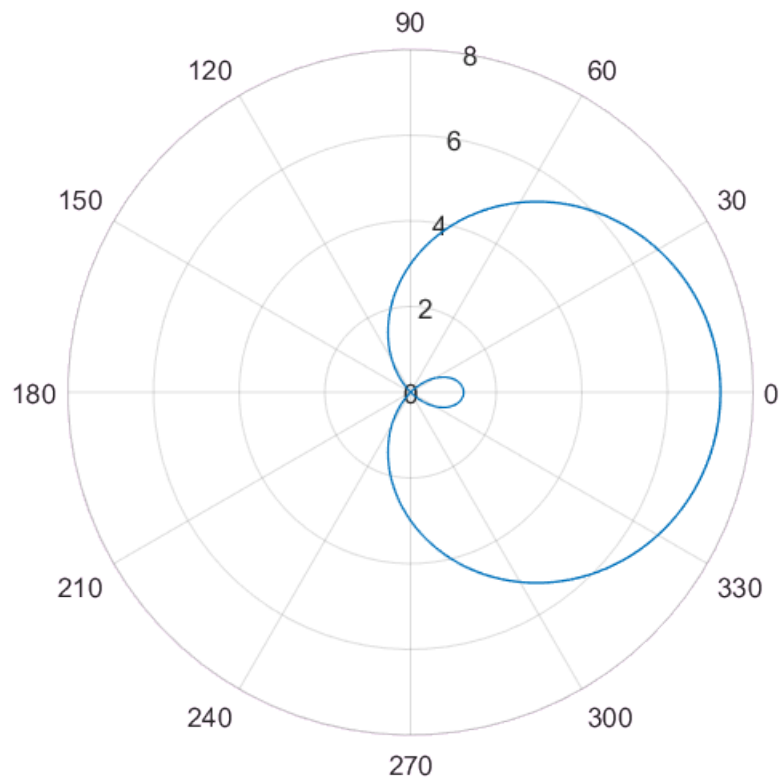


- $r = a(1 + \sqrt{2} \cos\theta)$

```
theta = 1:0.1:1000;
r = @(a) a .* (1 + sqrt(2) .* cos(theta))
```

r = function_handle with value:
 @(a)a.*(1+sqrt(2).*cos(theta))

```
polarplot(theta,r(3))
```

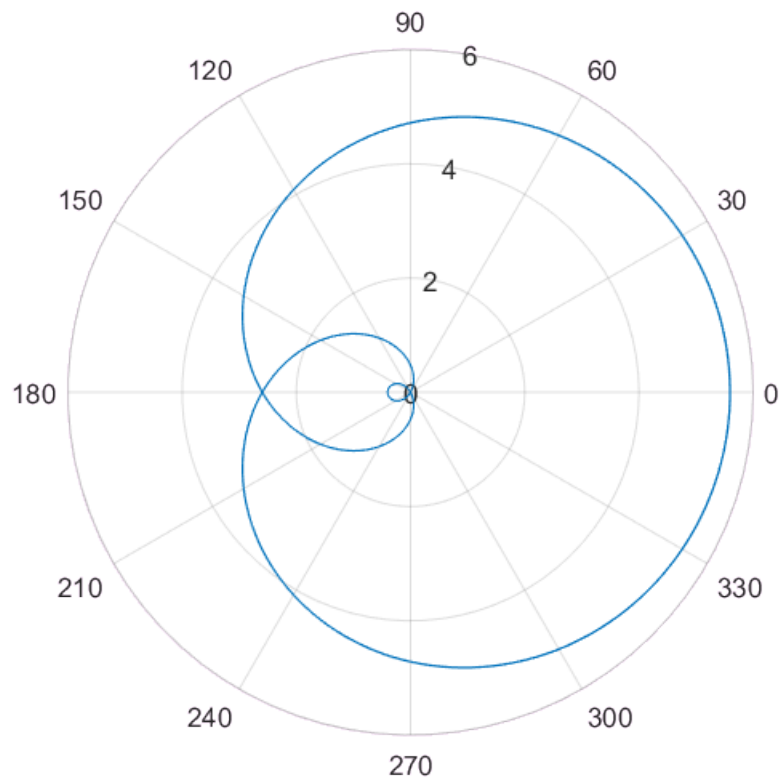


- $$r = a \left(\frac{\sqrt{3}}{2} + \cos \frac{\theta}{2} \right)$$

```
theta = 1:0.1:1000;
r = @(a) a .* (sqrt(3) / 2 + cos(theta ./2))
```

r = function_handle with value:
 @(a)a.*(sqrt(3)/2+cos(theta./2))

```
polarplot(theta,r(3))
```

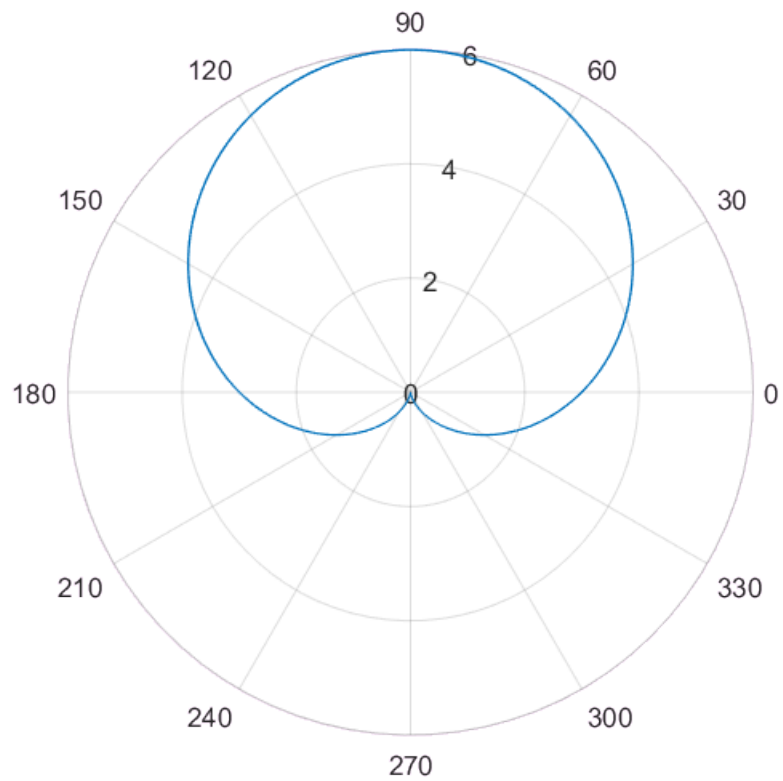


- $r = a(1 + \sin\theta)$

```
theta = 1:0.1:1000;  
r = @(a) a .* (1 + sin(theta))
```

r = function_handle with value:
`@(a)a.*(1+sin(theta))`

```
polarplot(theta,r(3))
```

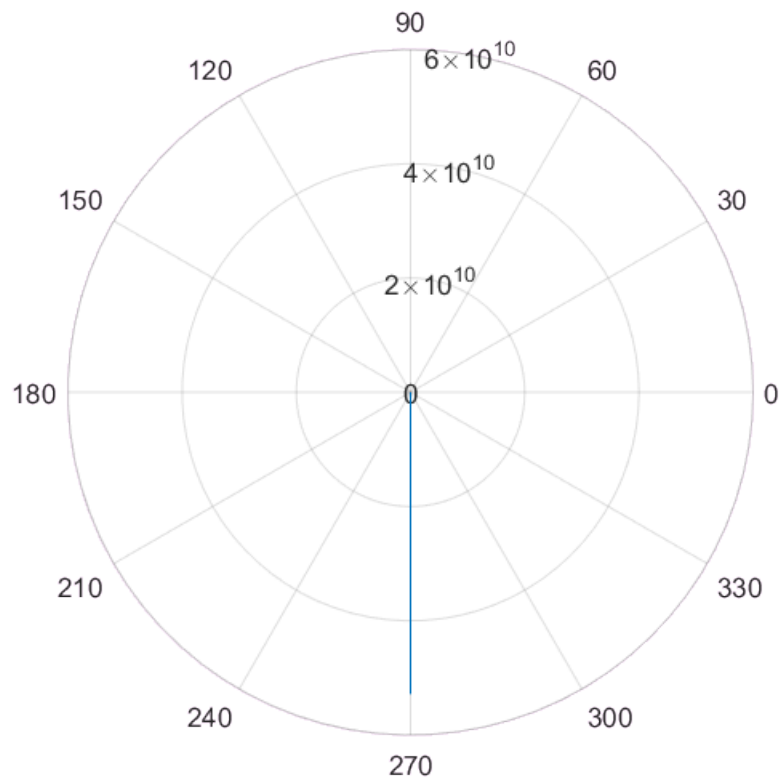


- $$r = \frac{2a}{(1 - \sin\theta)}$$

```
theta = 1:0.1:1000;
r = @(a) 2 .* a ./ (1 - sin(theta))
```

```
r = function_handle with value:
    @(a)2.*a./(1-sin(theta))
```

```
polarplot(theta,r(-3))
```

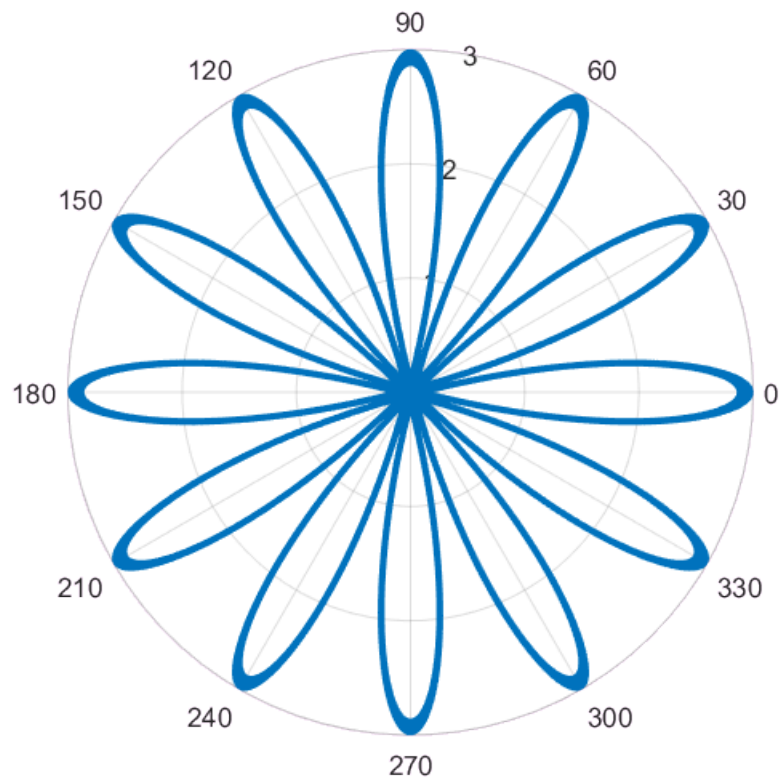


- $r = a \cos 6\theta$

```
theta = 1:0.1:1000;
r = @(a) a .* cos(6 .* theta)
```

```
r = function_handle with value:
    @(a)a.*cos(6.*theta)
```

```
polarplot(theta,r(3))
```

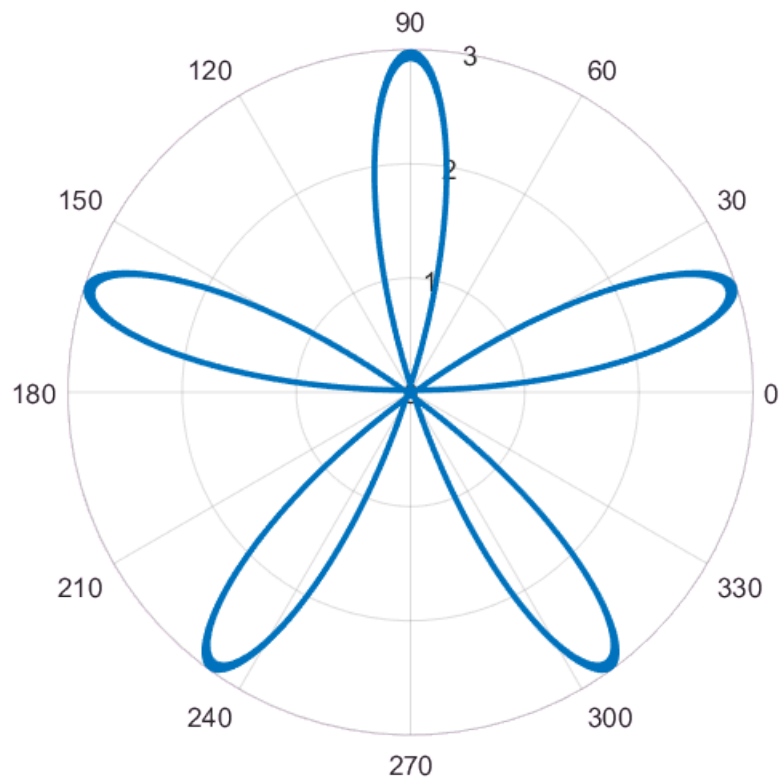



- $r = a \sin 5\theta$

```
theta = 1:0.1:1000;  
r = @(a) a .* sin(5 .* theta)
```

```
r = function_handle with value:  
@(a)a.*sin(5.*theta)
```

```
polarplot(theta,r(3))
```

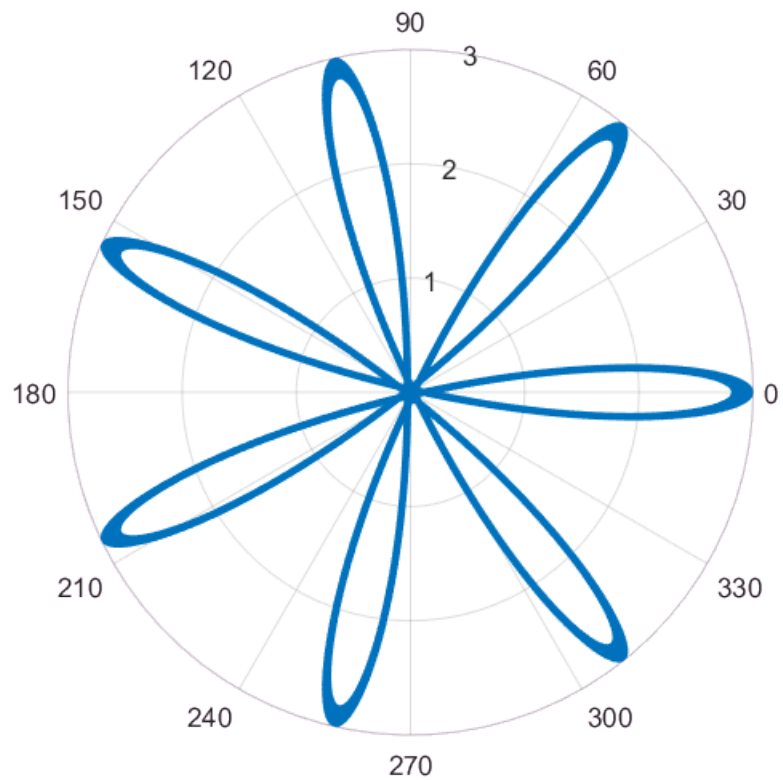


- $r = 7 \cos 7\theta$

```
theta = 1:0.1:1000;
r = @(a) a .* cos(7 .* theta)
```

```
r = function_handle with value:
    @(a)a.*cos(7.*theta)
```

```
polarplot(theta,r(3))
```

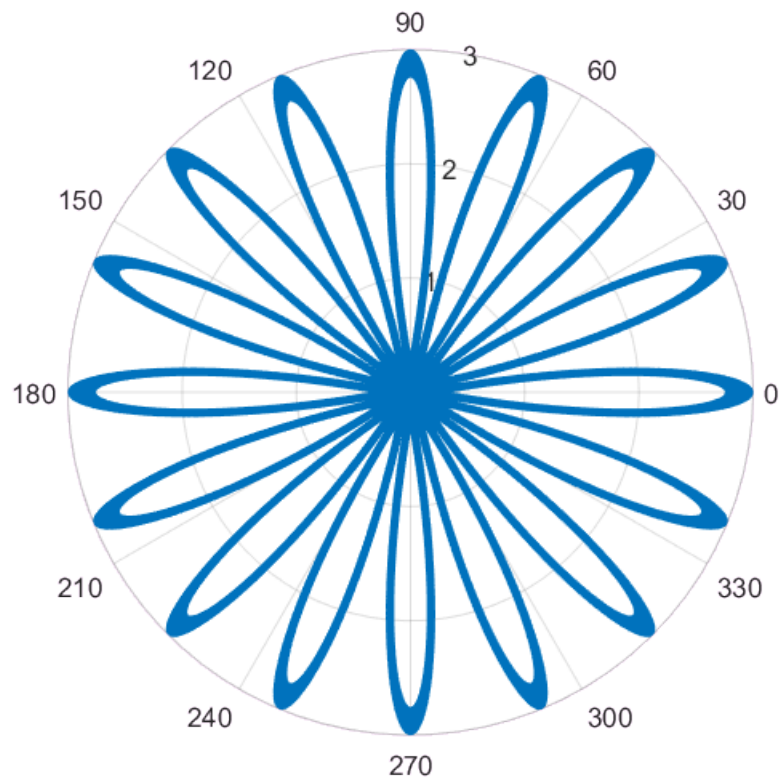


- $r = a \cos 8\theta$

```
theta = 1:0.1:1000;  
r = @(a) a .* cos(8 .* theta)
```

```
r = function_handle with value:  
@(a)a.*cos(8.*theta)
```

```
polarplot(theta,r(3))
```

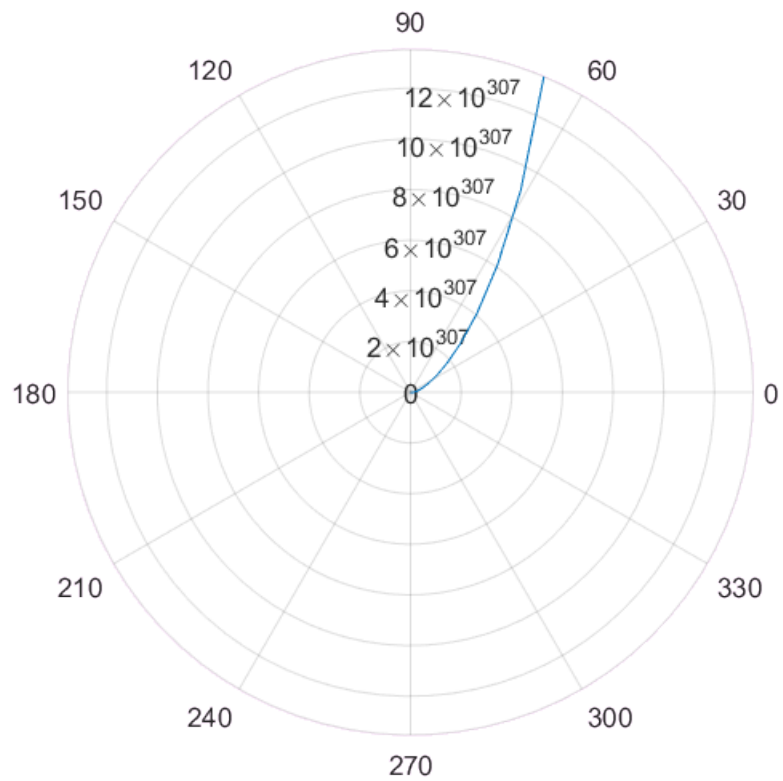


- $r = ae^{m\theta}$

```
theta = 1:0.1:1000;  
r = @(a,m) a .* exp(m .* theta)
```

```
r = function_handle with value:  
  @(a,m)a.*exp(m.*theta)
```

```
polarplot(theta,r(3,4))
```



- $r = a\theta$

```
theta = 1:0.1:1000;
r = @(a) a .* theta
```

r = function_handle with value:
 @(a)a.*theta

```
polarplot(theta,r(3))
```

