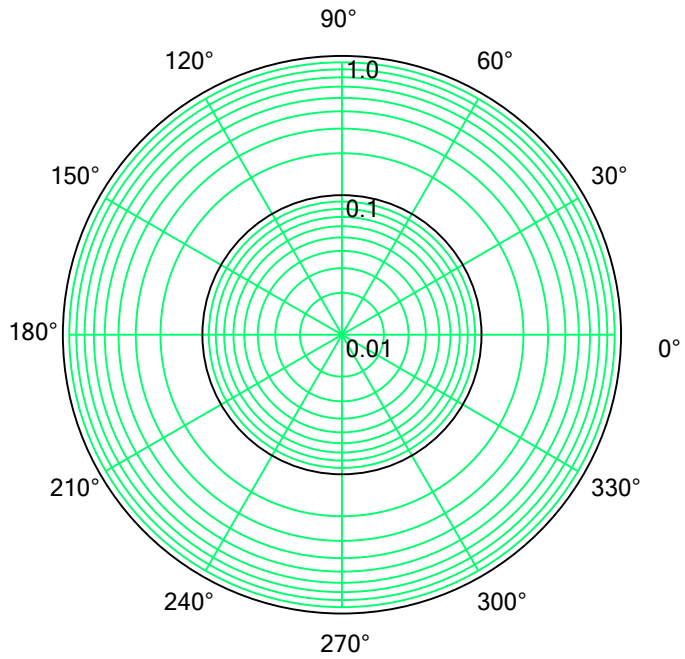
```
circle(clr, r) := ["circle" [0 0 r]^T clr "solid" 1]^T
```

```
appVersion(4) = "0.99.7921.69"
```

```
grid := [out clr] := [0 "#FF00FF6D"]
for n ∈ [1..9]
    r := 0.5·lg(n)
    out_n := circle(clr, r)
for n ∈ [2..9]
    r := 0.5·lg(n) + 0.5
    out := stack(out, [circle(clr, r)])
for n ∈ [0, 30..330]
    line := ["line" [0 0 r·cos(n °) r·sin(n °)]^T clr "solid" 1]^T
    out := stack(out, [line])
out := stack(out, [circle("black", 0.5)], [circle("black", 1)])
[out]
```

```
labels := r := 1.12
N := 12
out := [r 0 "0°" 9]
for n ∈ [30, 60..330]
    text := [r·cos(n °) − 0.09 r·sin(n °) + 0.06 concat(num2str(n), "°") 9]
    out := stack(out, text)
out := stack(out, [0 0 "0.01" 9])
out := stack(out, [0 0.5 "0.1" 9])
out := stack(out, [0 1 "1.0" 9])
out
```




```
{grid
 labels
```

$f := 600$ МГц $\qquad \lambda := \frac{c}{f} = 0.4997$ м $\qquad k := \frac{2 \cdot \pi}{\lambda} = 12.5751 \cdot \frac{1}{\text{м}}$

$\psi := 60°$ $\qquad S := 0.8 \cdot \lambda = 0.3997$ м $\qquad l_0 := 0.25 \cdot \lambda = 0.1249$ м

$M := \frac{180°}{\psi} = 3$ $\qquad \text{Clear}(n) = 1$

sinc(x)

$$F_0(\theta) := sinc\left(\frac{k \cdot l_0}{2} \cdot (\cos(\theta) - 1)\right) \cdot sinc\left(\frac{k \cdot l_0}{2} \cdot (\cos(\theta) + 1)\right) \cdot \sin(\theta)$$

$$D_0 := \frac{2 \cdot F_0(90°)}{\int_0^{\pi} F_0(\theta)^2 \cdot \sin(\theta)\, d\theta} = 2.0244$$

$$F_n(\theta, \varphi) := \sum_{n=-M}^{M} \left((-1)^n \cdot e^{i \cdot k \cdot S \cdot \sin(\theta) \cdot \cos(\varphi + n \cdot \psi)}\right)$$

$F_{res}(\theta, \varphi) := F_0(\theta)^2 \cdot |F_n(\theta, \varphi)|^2$ $\qquad F_{resn}(\theta, \varphi) := \frac{F_{res}(\theta, \varphi)}{F_{res}(90°, 0°)}$

the range for phi shold be [-psi/2 ... +psi/2] $\qquad \frac{\psi}{2} = 0.5236$ $\qquad \theta := \left[0, \frac{\pi}{100} .. \pi\right]$

$F_1 :=$
- $N := 20$
- $\Delta\varphi := \frac{\psi}{N}$
- $out := 0$
- for $k \in [1..(N+1)]$
  - $\varphi := (k-1) \cdot \Delta\varphi - \frac{\psi}{2}$
  - $f := F_{resn}(90°, \varphi)$
  - $f := 0.5 \cdot \lg(f) + 1$
  - $out_{k,1} := f \cdot \cos(\varphi)$
  - $out_{k,2} := f \cdot \sin(\varphi)$
- out