Solution

a)

0:

4	2	1	0
2	4	0	0
1	0	6	1
0	0	1	2

π/4:

4	1	0	0
1	2	2	0
0	2	4	1
0	0	1	0

π/2:

6	0	2	0
0	4	2	0
2	2	2	2
0	0	2	0

3π/4:

2	1	3	0
1	2	1	0
3	1	0	2
0	0	2	0

Solution

b) Texture analysis

Solution

c) horizontal direction: values are spread out

vertical direction: values are concentrated on the diagonal

Solution

d) Contrast: $\sum_{i,j} (i-j)^2 p(i,j)$

Solution

e) $\int_0^{2\pi}\int_0^{r'} F(r,\varphi)\,dr\,d\varphi$

This feature measures the energy in the low-frequency range of the Fourier spectrum)