

Figura 1. Imagem monocromática e gráfico de sua função.

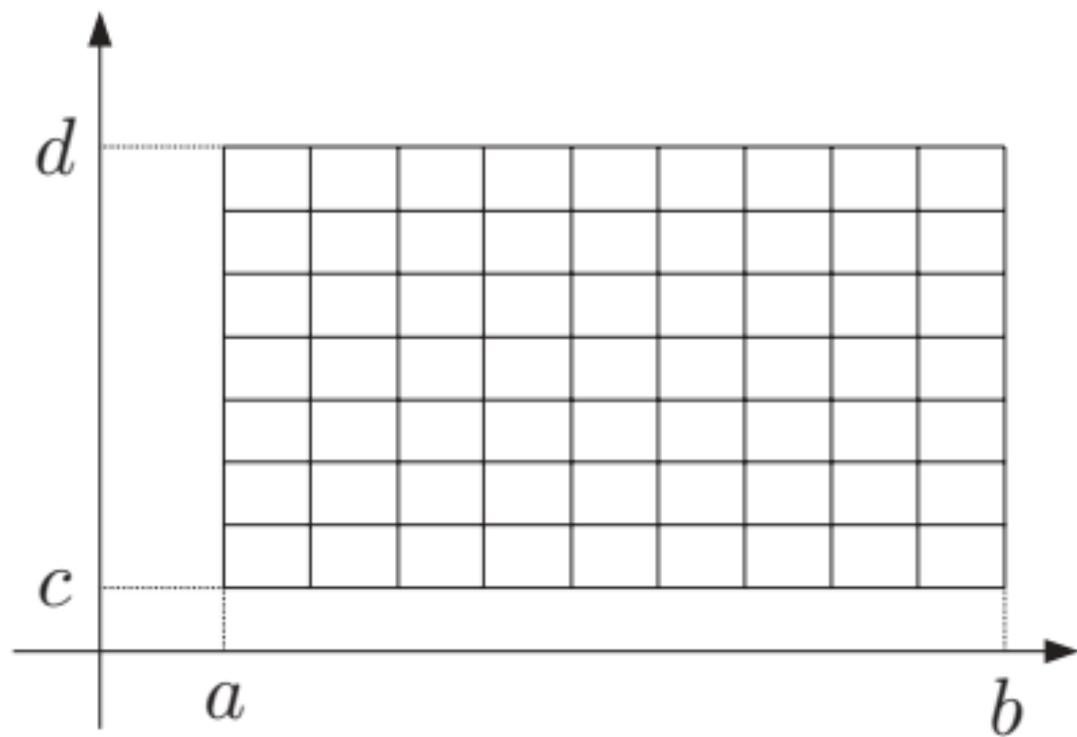
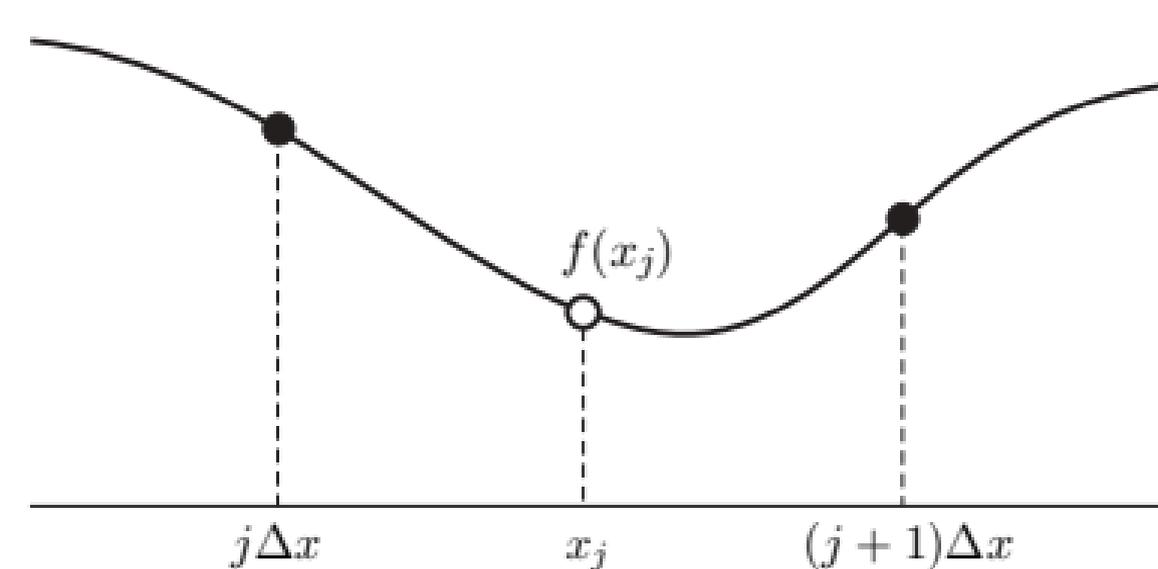
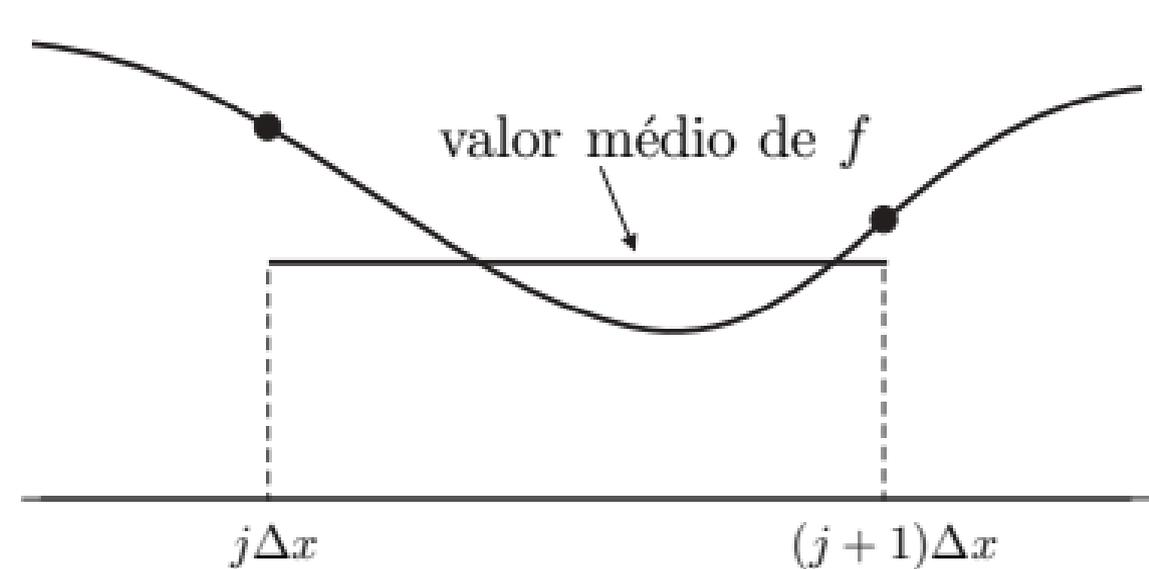


Figura 2. Reticulado uniforme da representação matricial da imagem.



(a)



(b)

Figura 3. Amostragem pontual (a) e amostragem por área (b).



Figura 4. Diferentes resoluções espaciais de uma imagem.

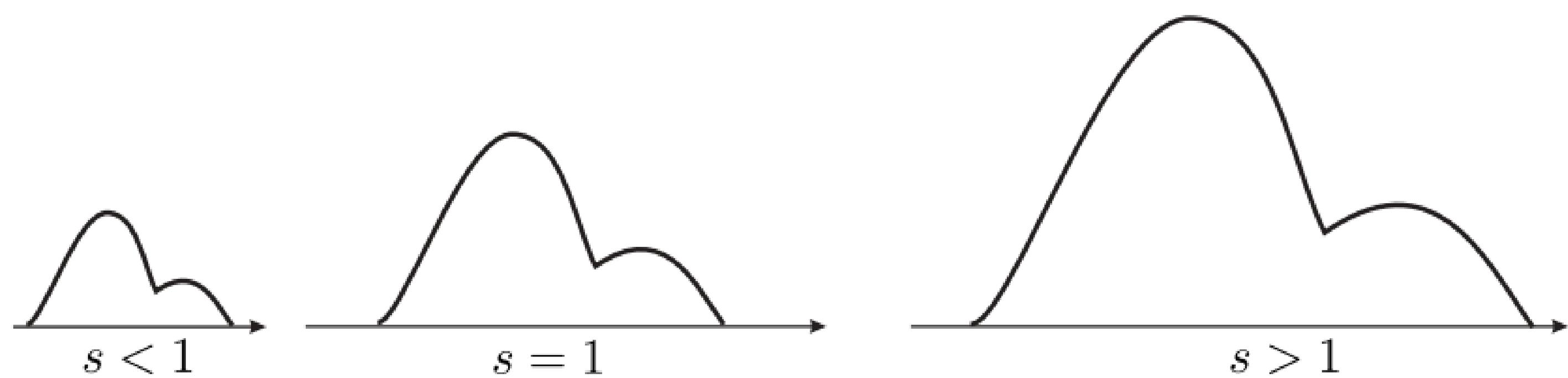
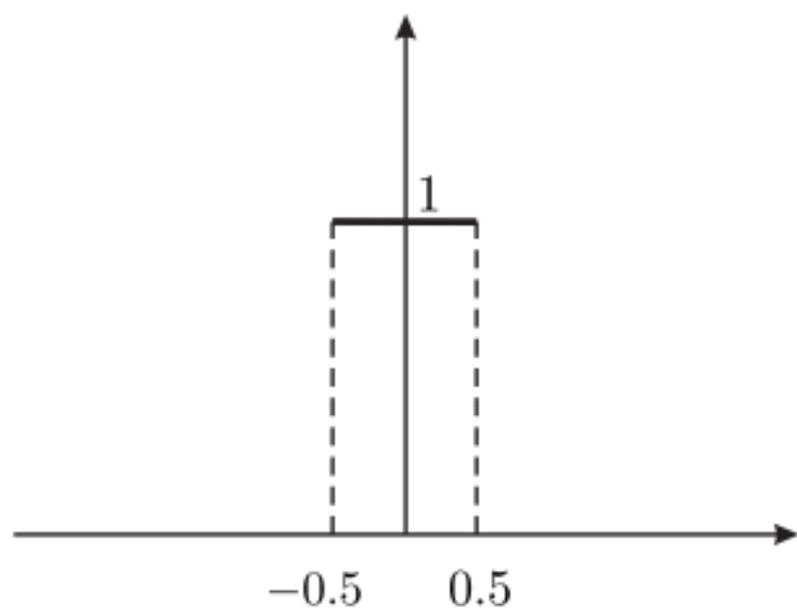


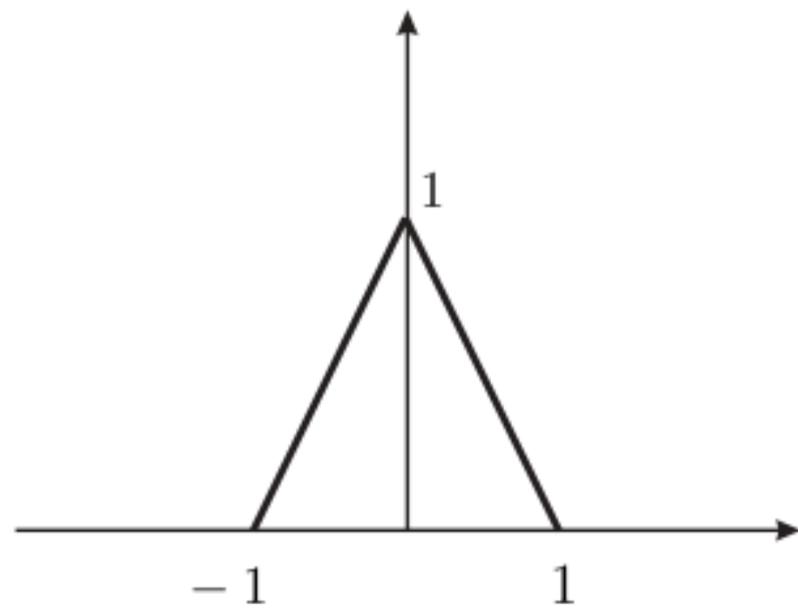
Figura 5. Dilatação de uma função.



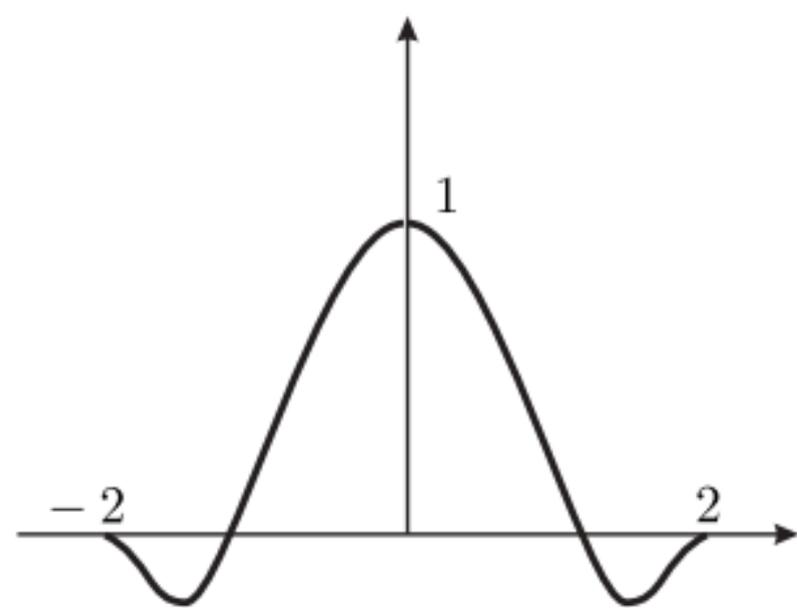
Figura 6. Gradação com 256 níveis de intensidade.



(a)

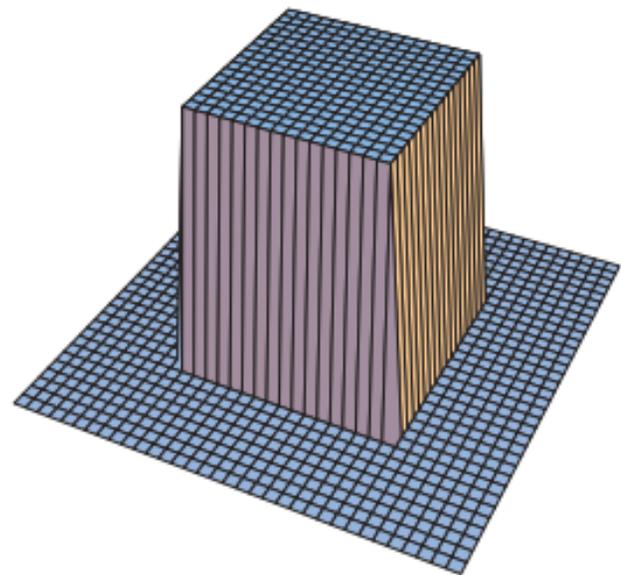


(b)

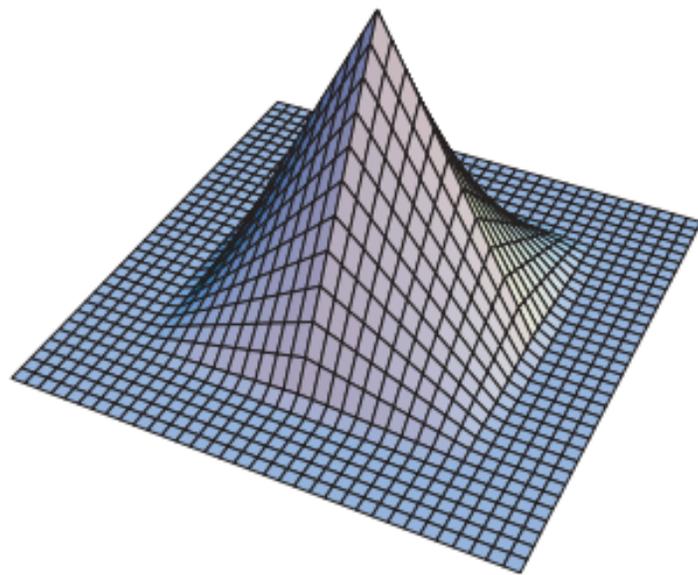


(c)

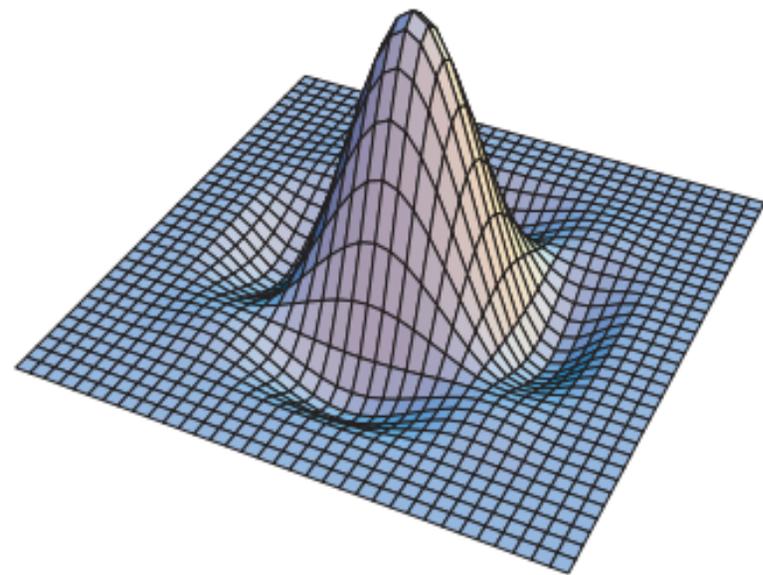
Figura 7. Núcleos de reconstrução: núcleo constante (a), núcleo triangular (b) e cúbico (d).



(a)

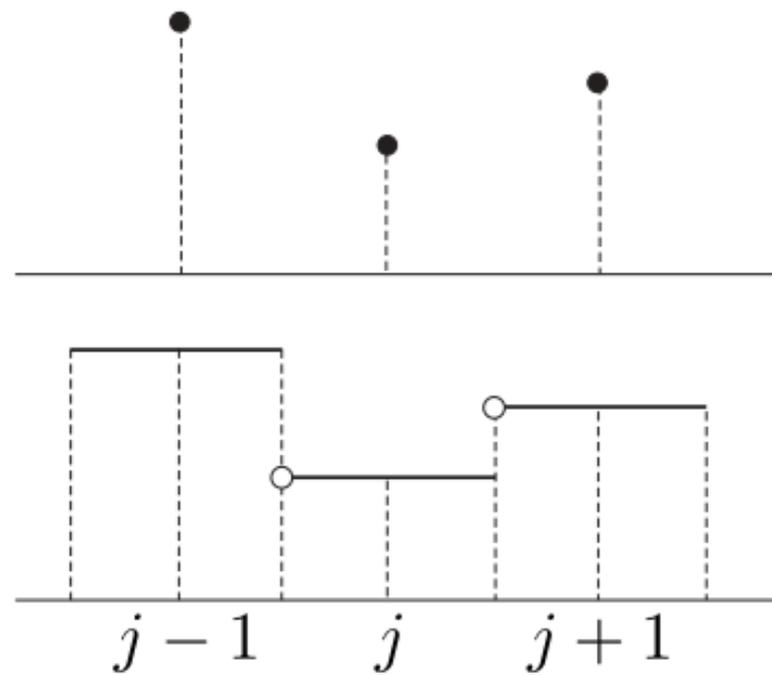


(b)

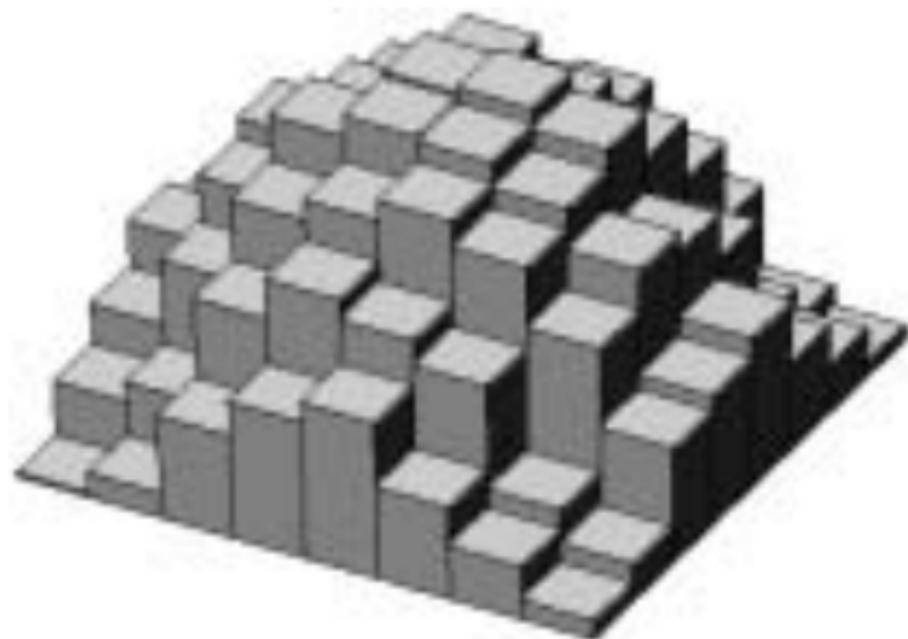


(c)

Figura 8. Núcleos de reconstrução bidimensionais correspondentes aos núcleos constante (a), triangular (b) e cúbico (c) (cortesia de Moacyr Silva).

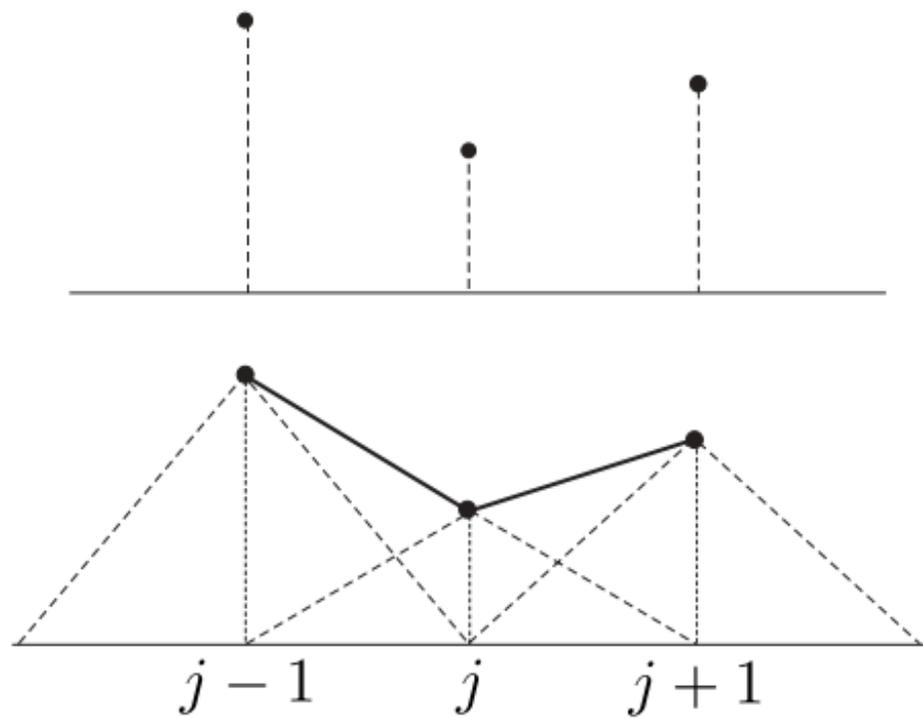


(a)

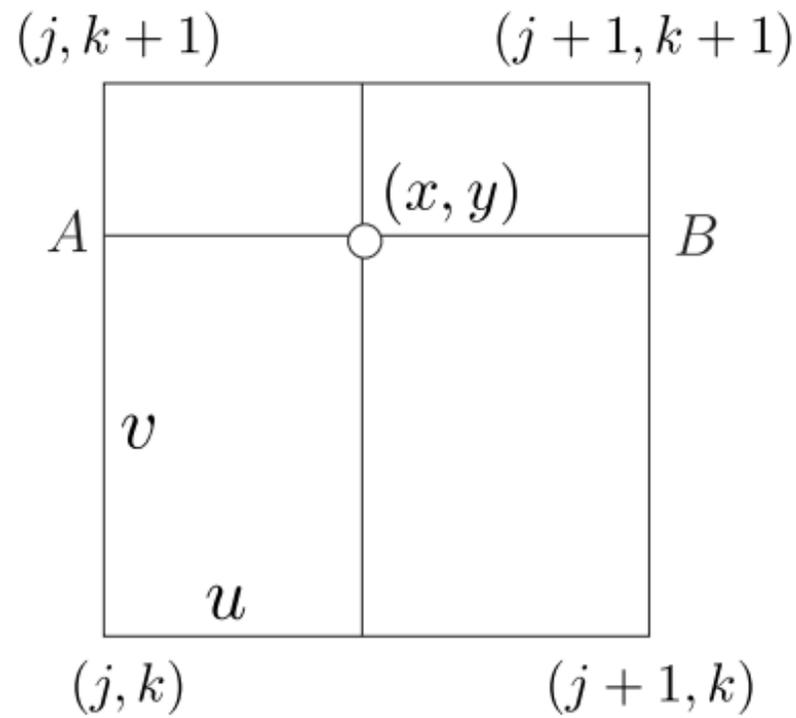


(b)

Figura 9. Reconstrução com núcleo constante unidimensional (a) e bidimensional (b).



(a)



(b)

Figura 10. Reconstrução com núcleo triangular unidimensional (a) e bidimensional (b).

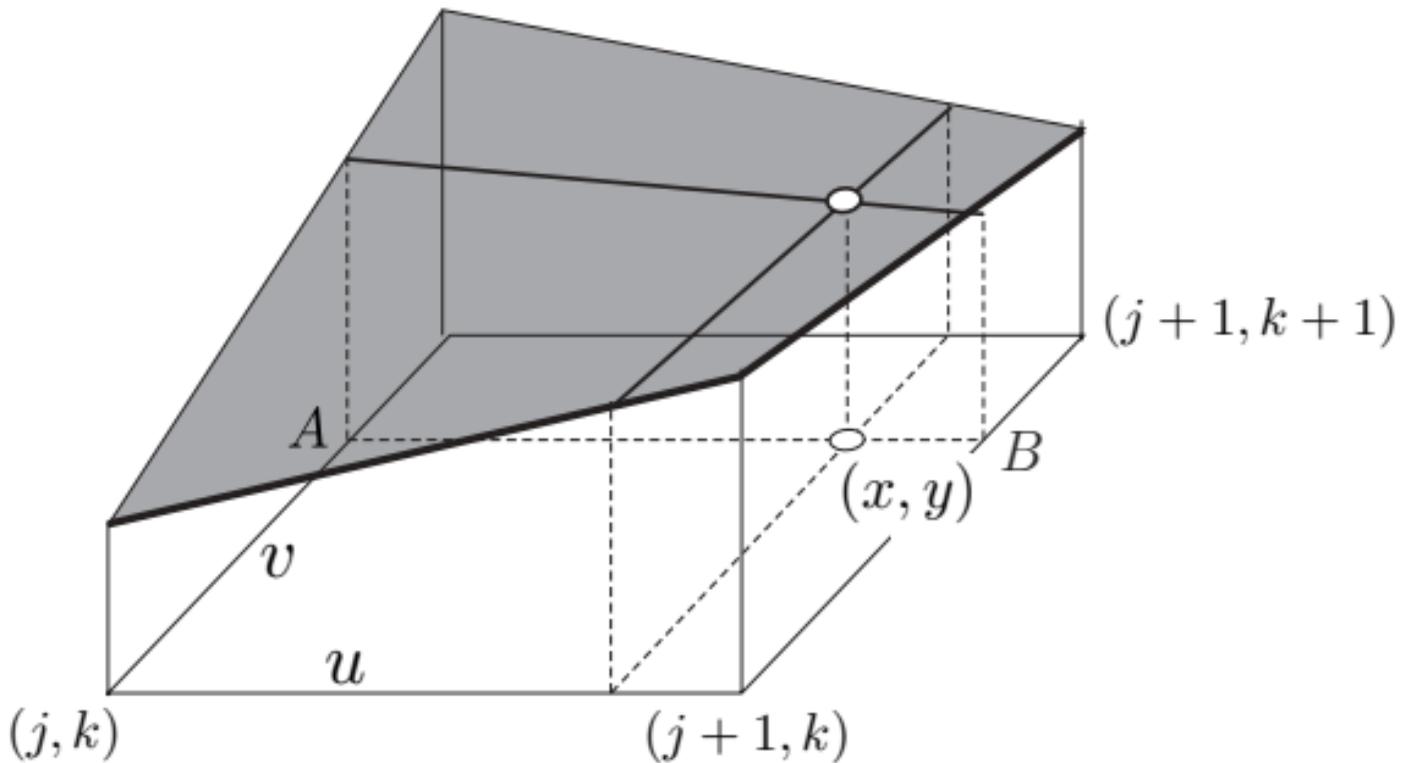


Figura 11. Interpolação bilinear.



(a)



(b)



(c)



(d)

Figura 12. Reconstrução com núcleo constante (b), núcleo de Bartlett (bilinear) (c) e cúbico (d).

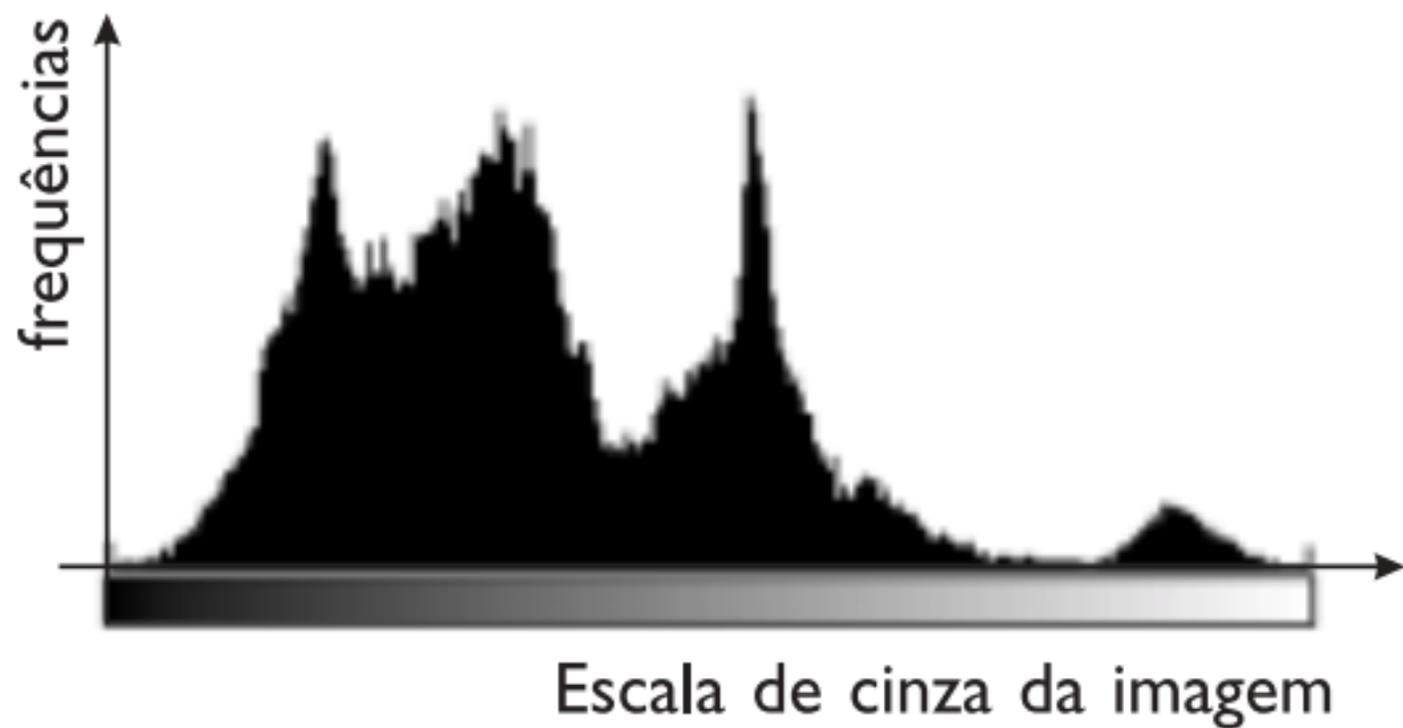


Figura 13. Histograma de frequencia de uma imagem.

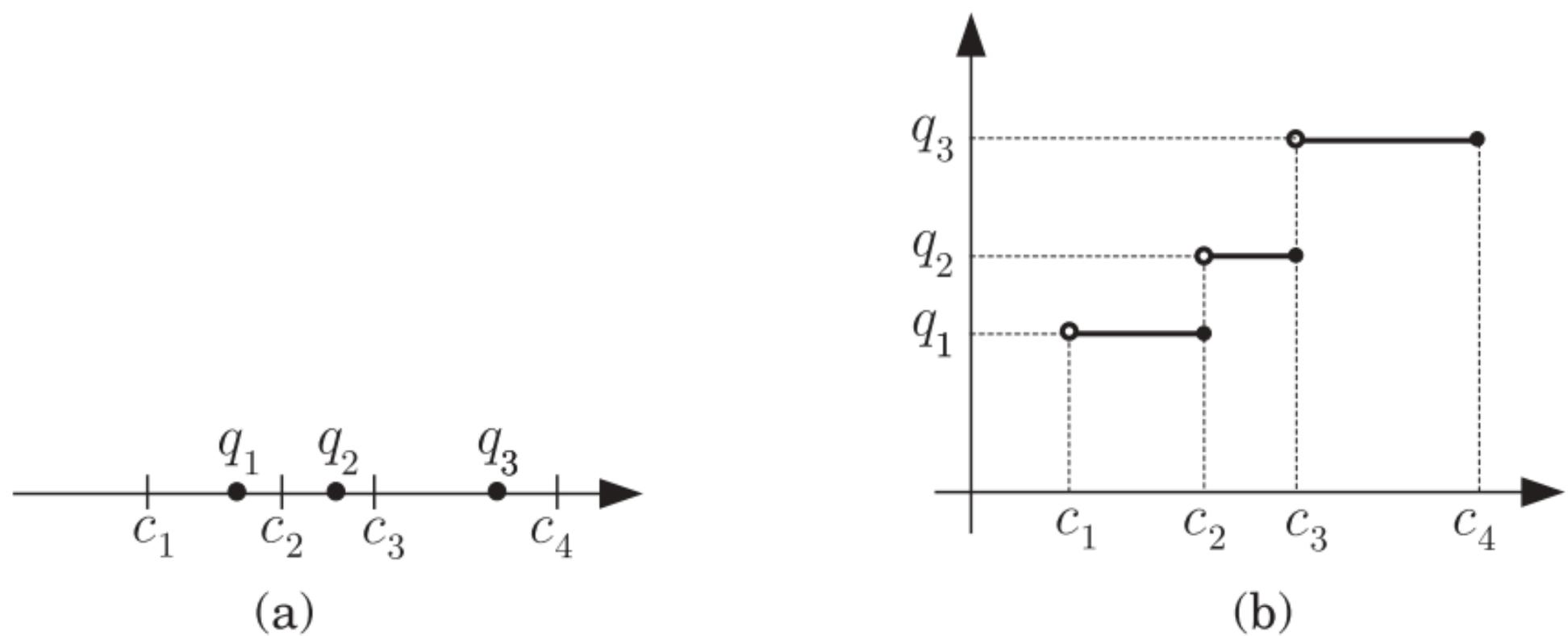
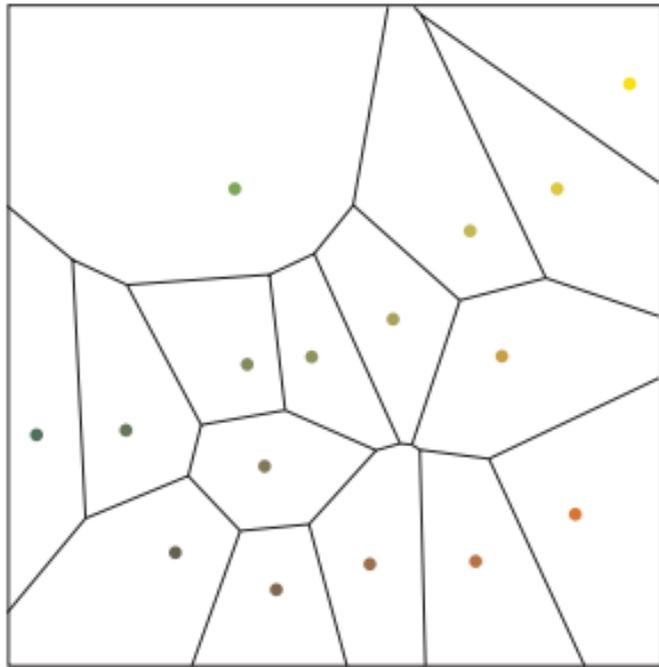


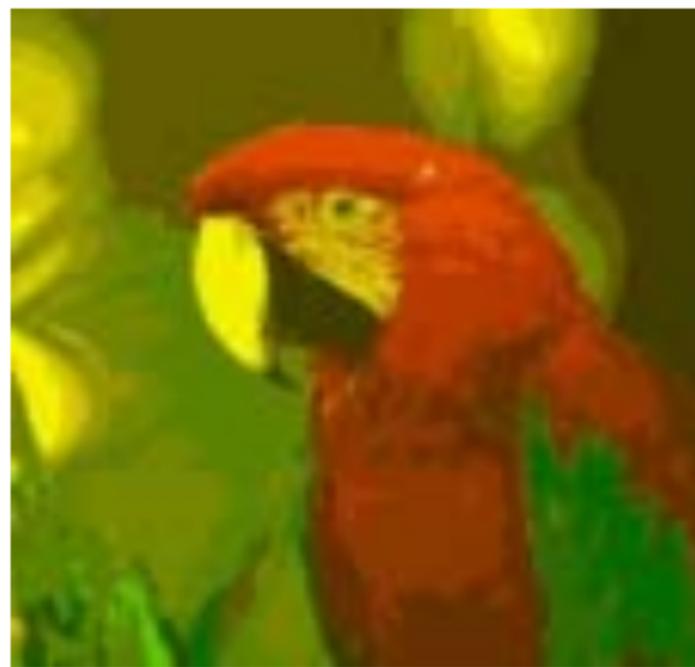
Figura 14. Níveis de quantização e gráfico da função de quantização.



(a)

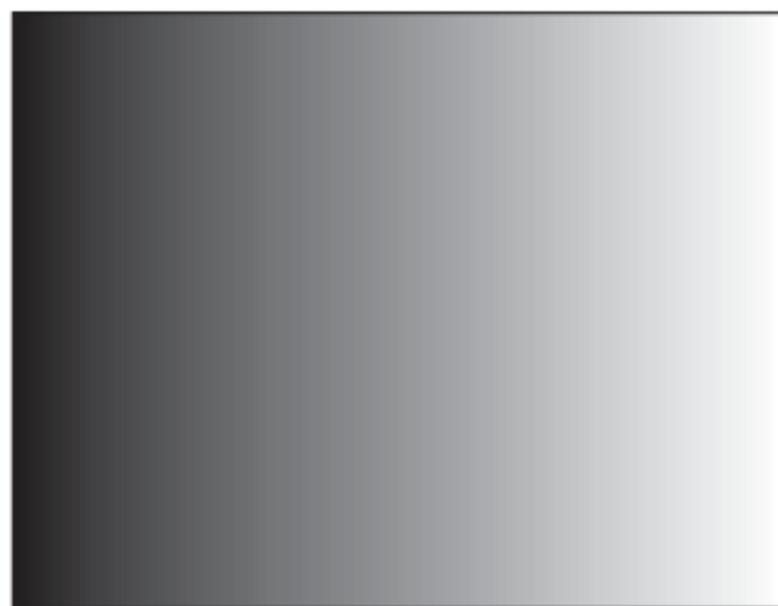


(b)



(c)

Figura 15. Quantização bidimensional (Ver prancha 3, a cores).



(a)

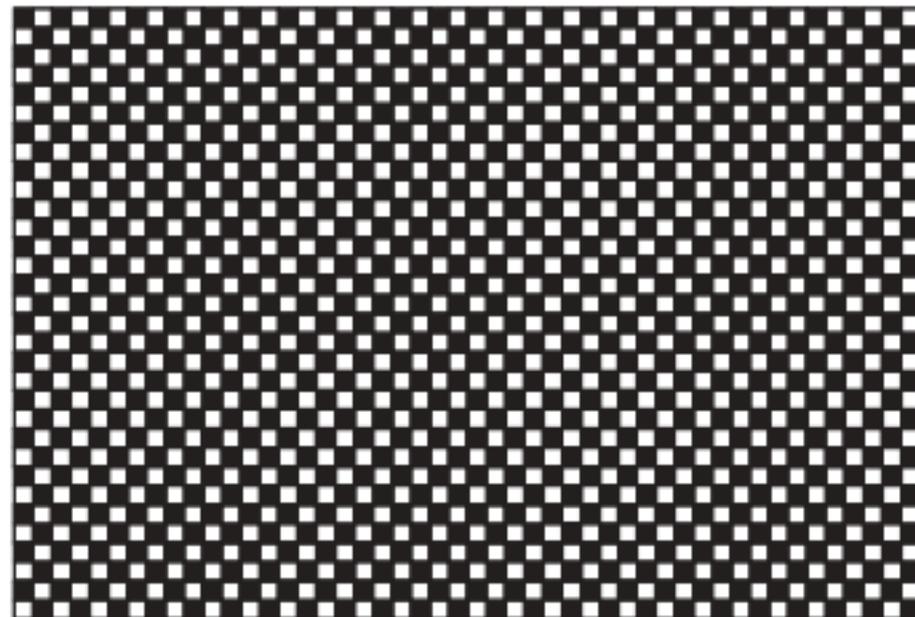


(b)

Figura 16. Rampa linear (a) com 8 bits, e sua quantização para 1 bit (b).



(a)



(b)

Figura 17. Padrão periódico de um método de dithering.



(a)



(b)

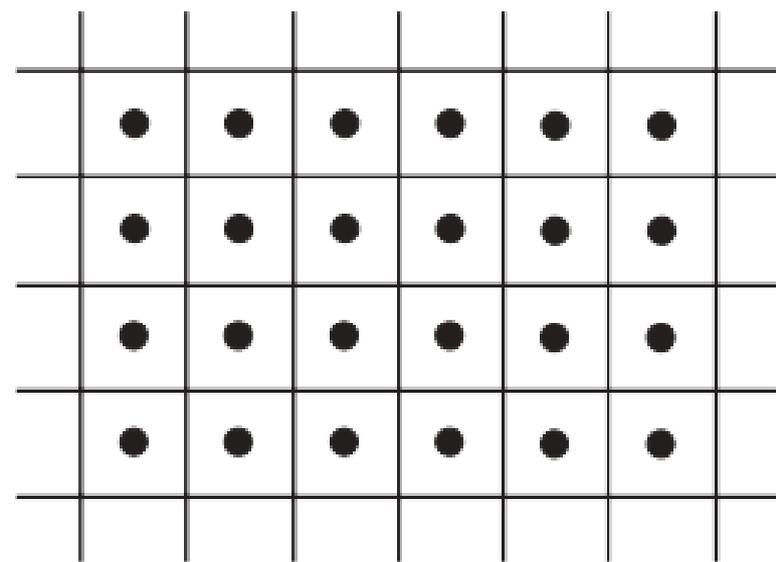


(c)

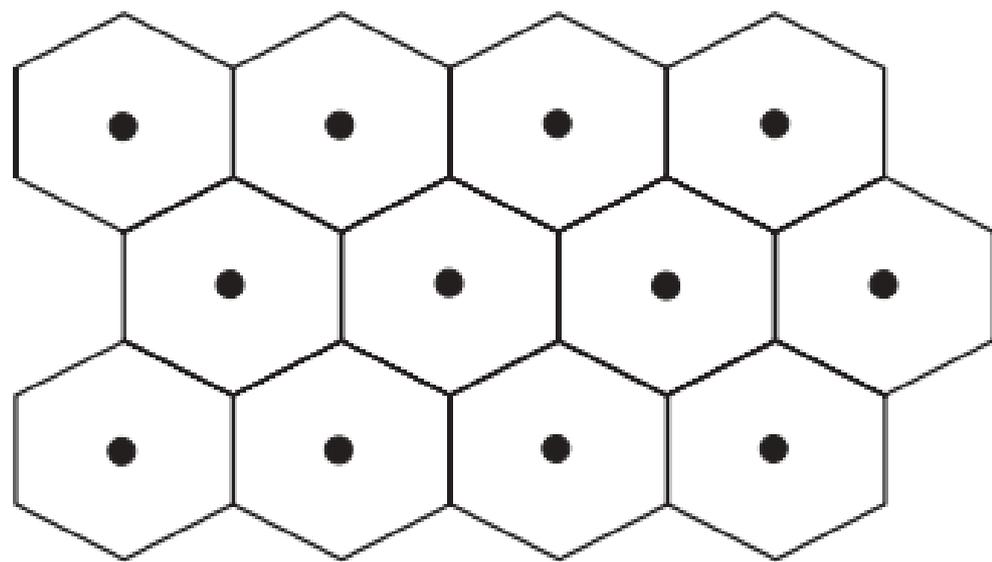


(d)

Figura 18. Contorno de quantização.



(a)



(b)

Figura 19. Células de quantização uniforme bidimensional.



(a)

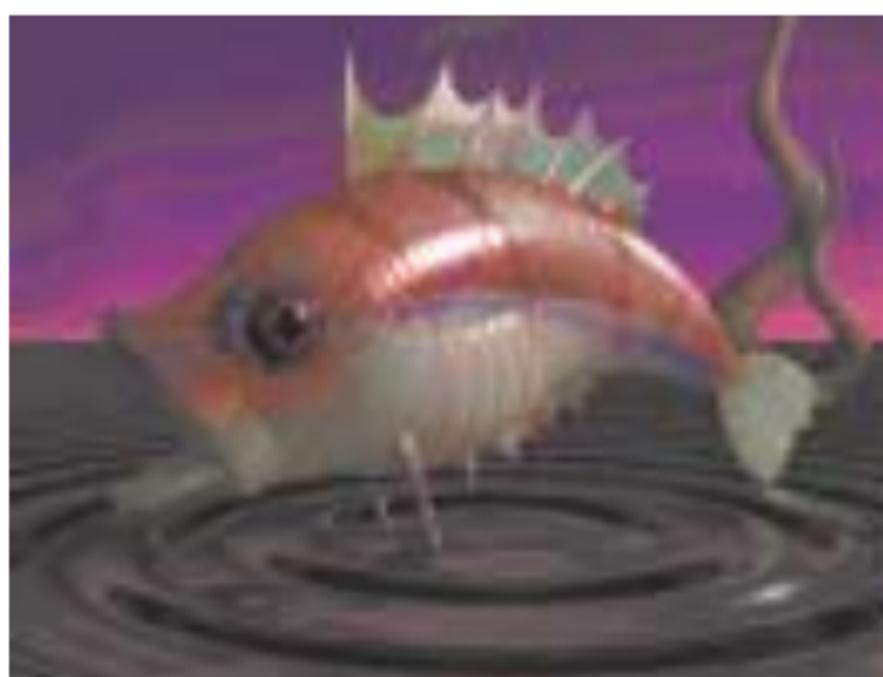


(b)



(c)

Figura 20. Imagem a cores com 24 bits (a), Quantização uniforme com 8 bits (b) e com 4 bits (c)



(a)



(b)

Figura 21. Algoritmo de populosidade: (a) Quantização com 8 bits (b) quantização com 4 bits

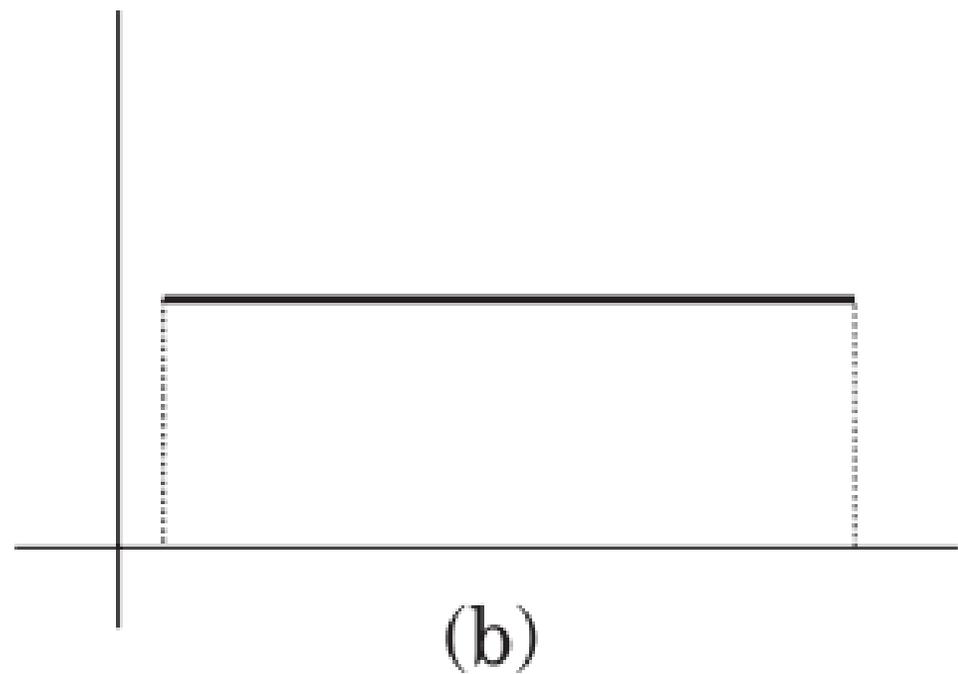
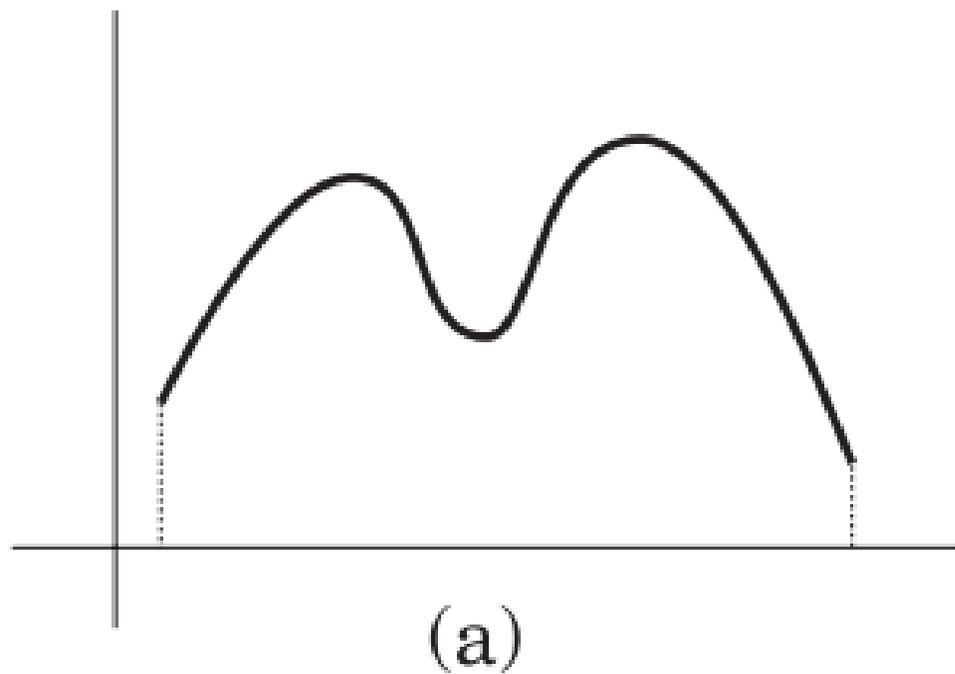


Figura 22. (a) Histograma original; (b) Histograma equalizado.



(a)



(b)

Figura 23. Quantização pelo algoritmo do corte mediano: (A) 256 cores; (B) 16 cores

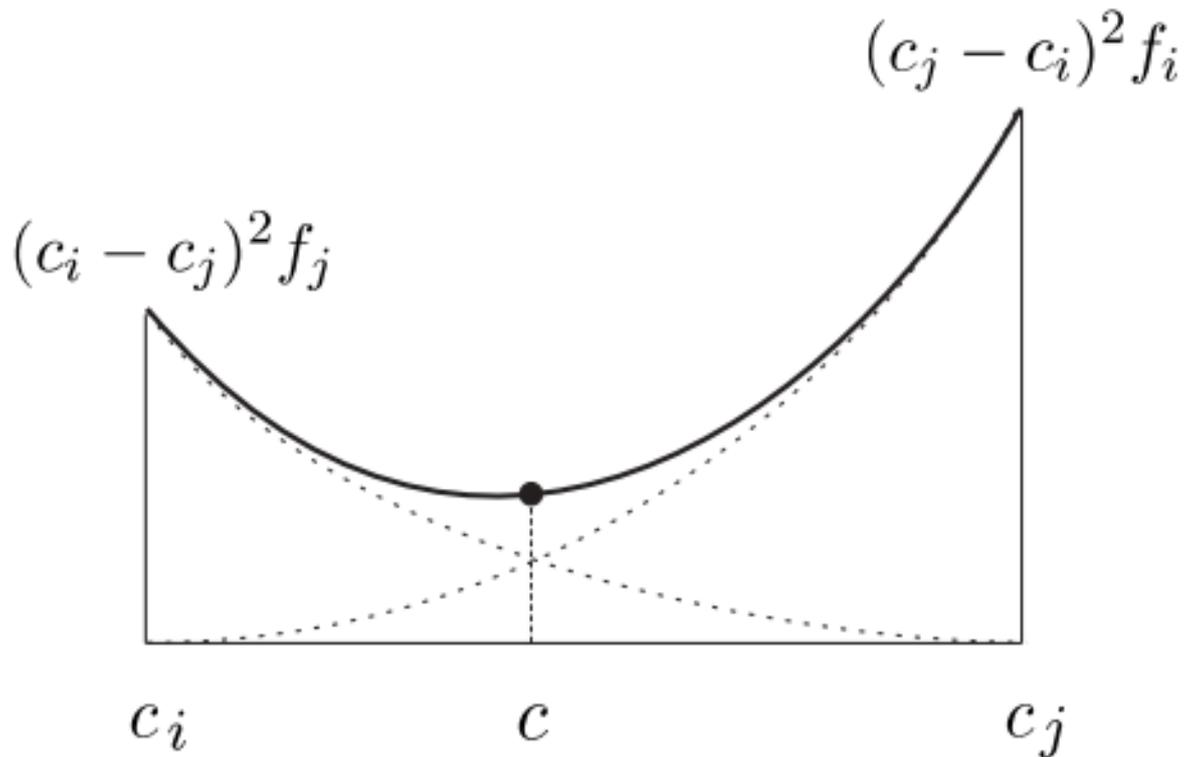


Figura 24. Erro de quantização num aglomerado de duas cores.



(a)



(b)

Figura 25. (a) Quantização para 256 cores; (b) quantização para 16 cores (ver prancha 7, a cores).

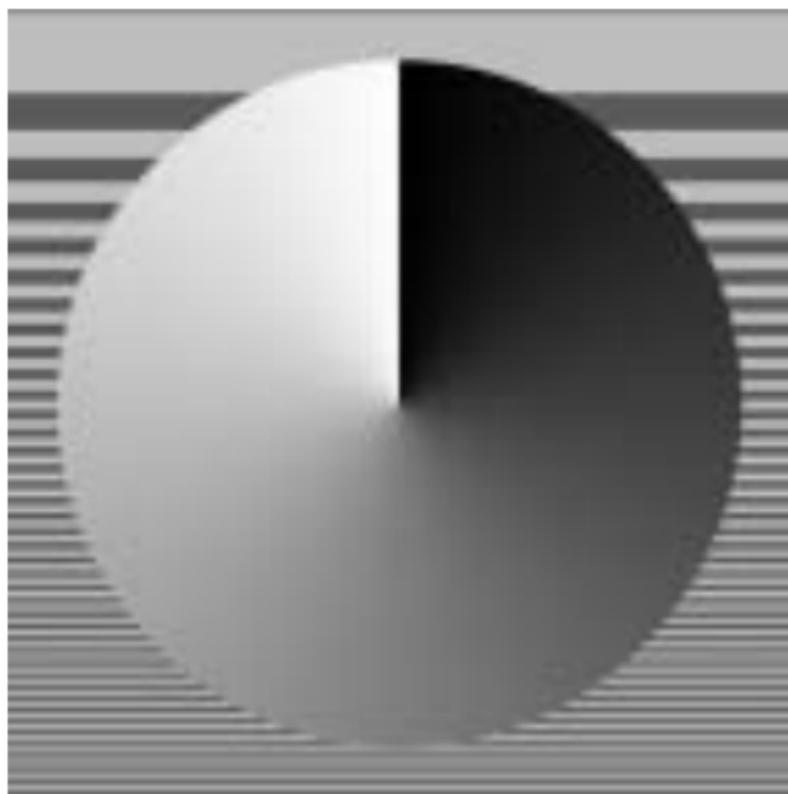


Figura 26. Imagens de meio tom para comparação de dithering.



Figura 27. Quantização com limiar constante.

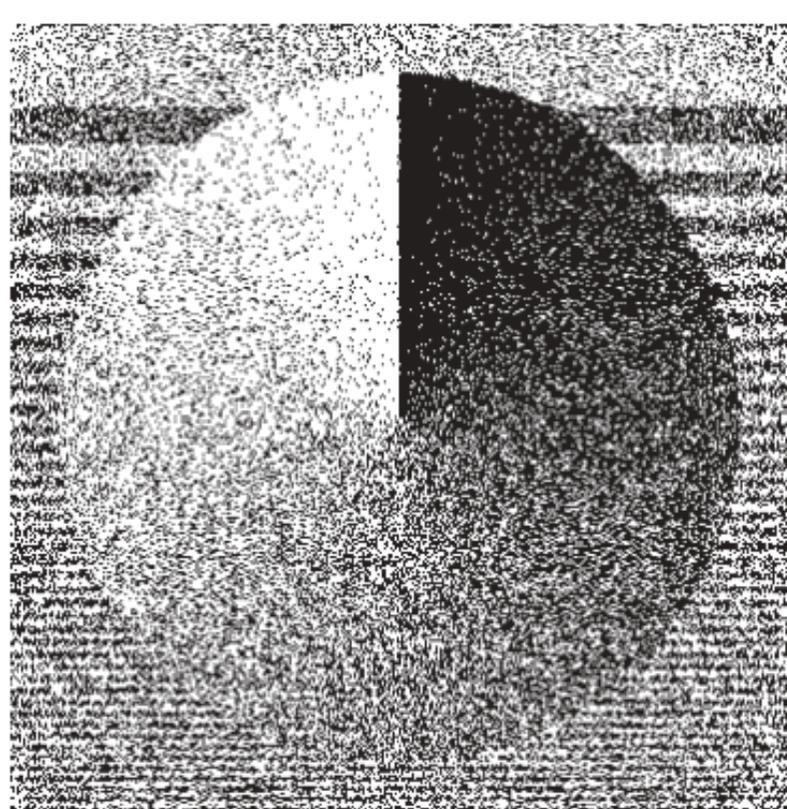


Figura 28. Dithering por limiar aleatório.

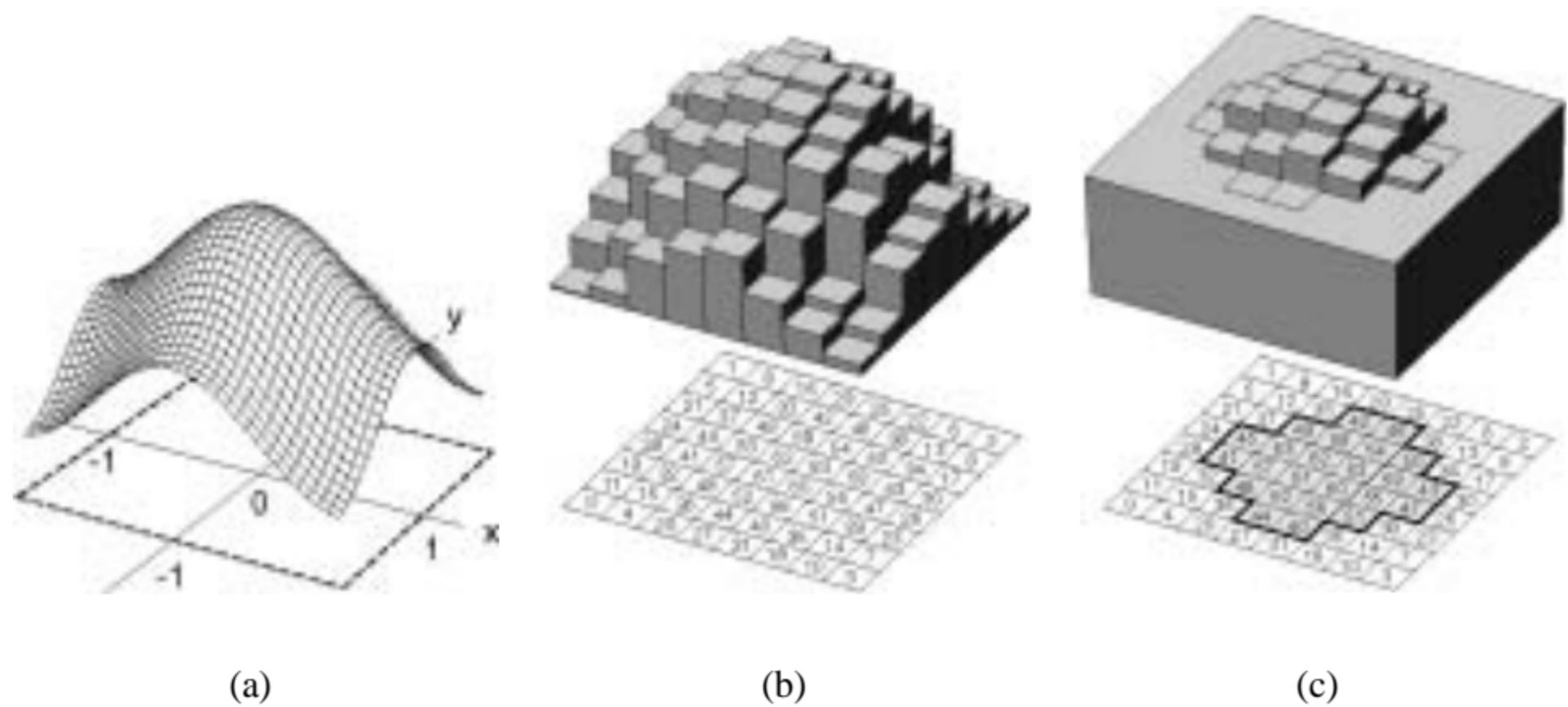


Figura 29. Função de limiar e sua discretização(Ostromoukhov & Hersch, 1995).

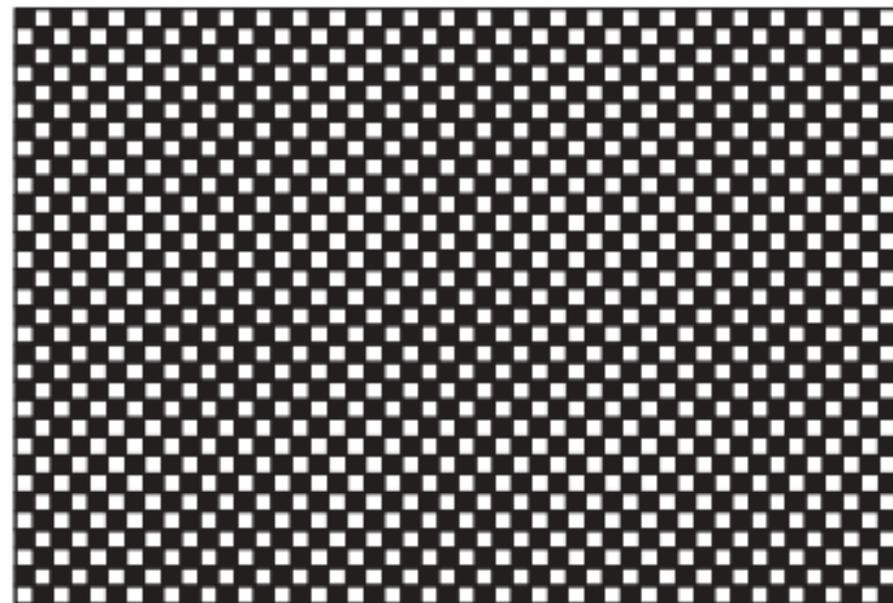
2	3
4	1



(a)



(b)



(c)

Figura 30. Padrão periódico de um método de dithering.

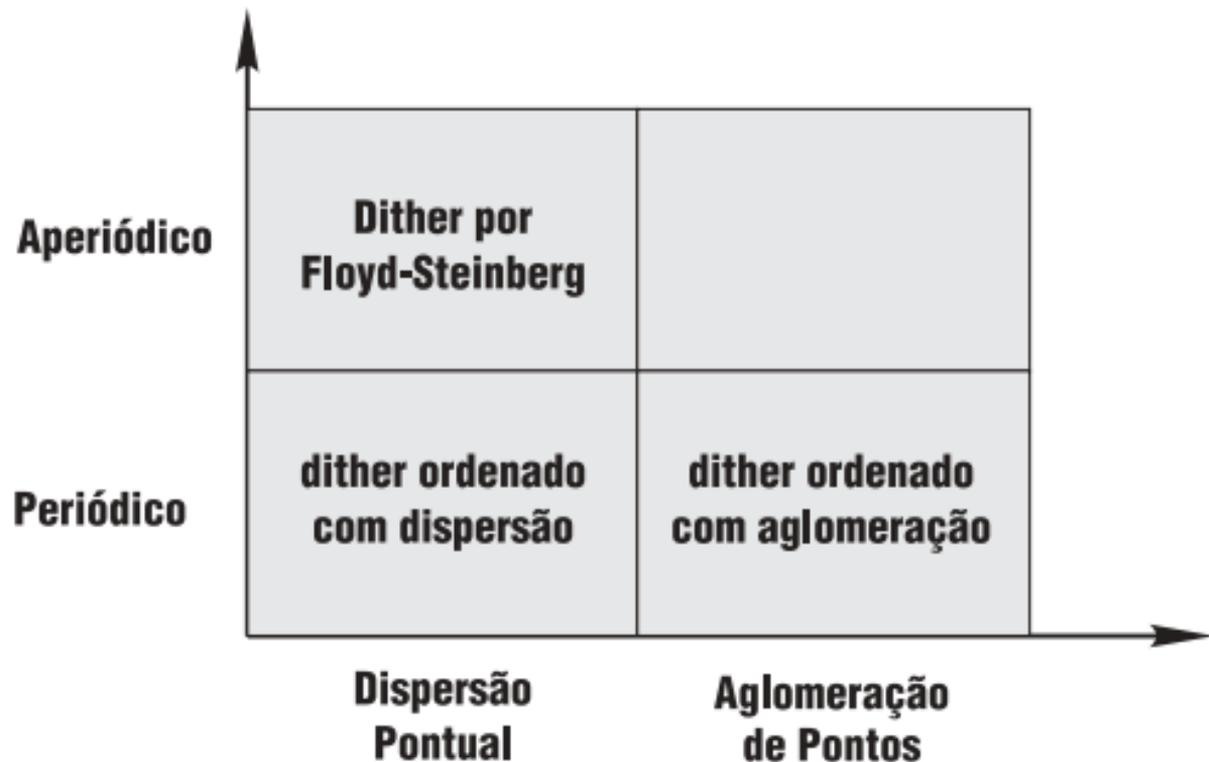


Figura 31. Classes de algoritmos de dithering.

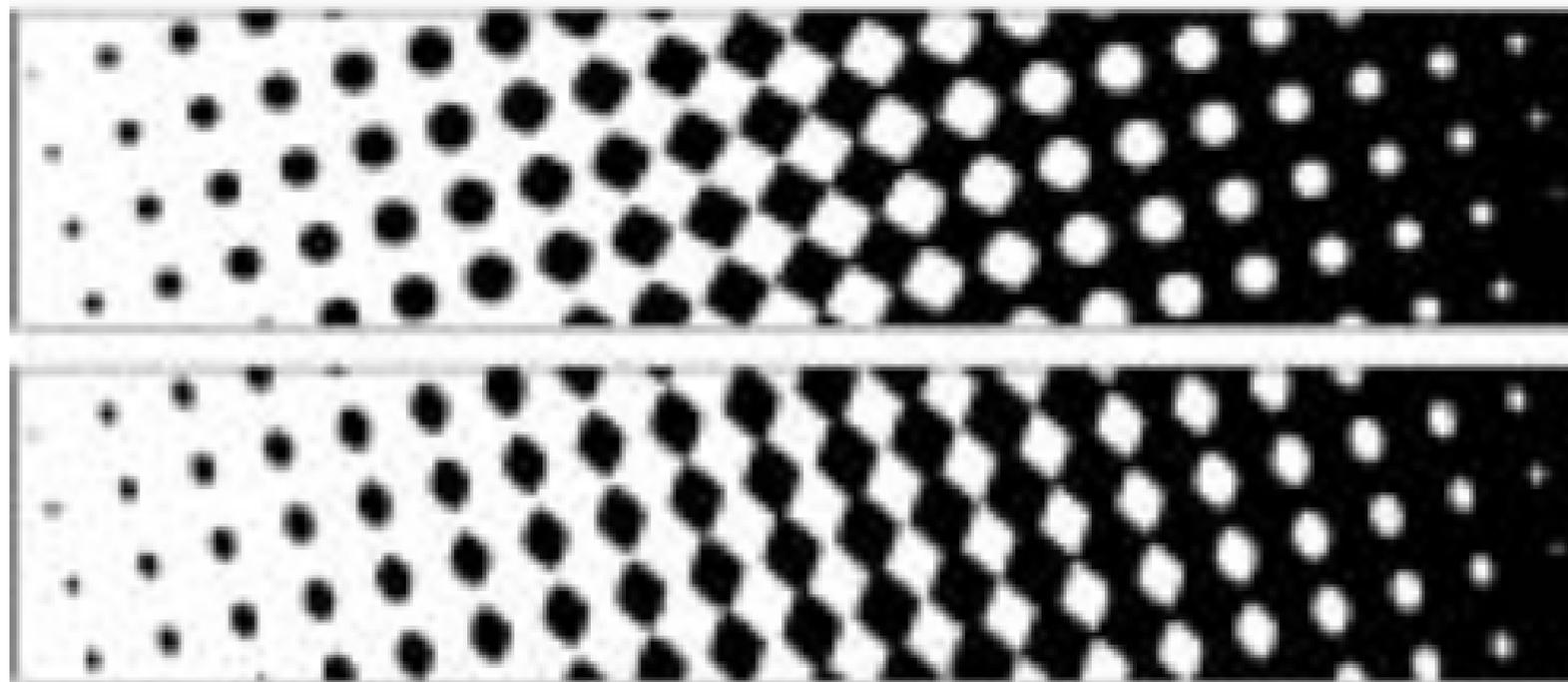


Figura 32. Diferentes geometrias de aglomerados.

35	30	18	22	31	36
29	15	10	17	21	32
14	9	5	6	16	20
13	4	1	2	11	19
28	8	3	7	24	25
34	27	12	23	26	33

(a)

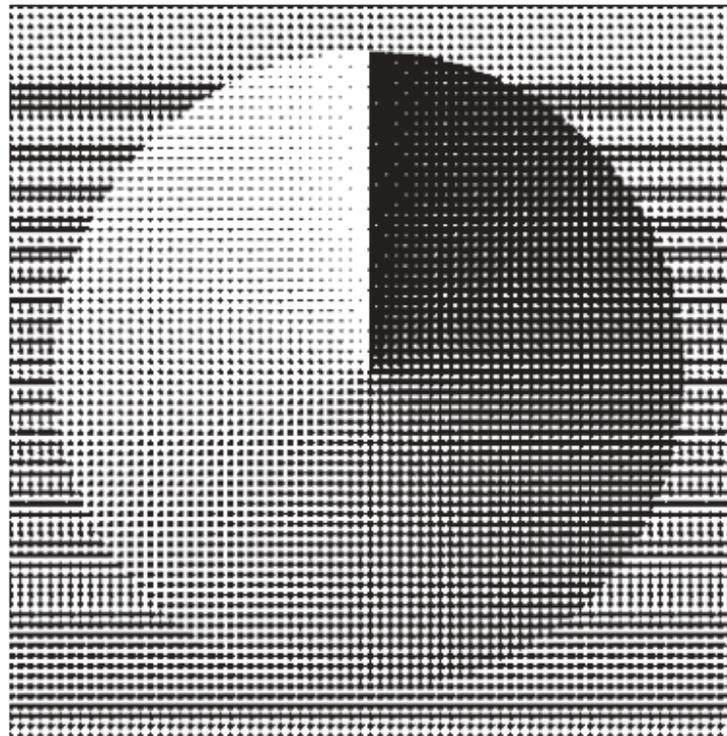
35	30	18	22	31	36
29	15	10	17	21	32
14	9	5	6	16	20
13	4	1	2	11	19
28	8	3	7	24	25
34	27	12	23	26	33

(b)

Figura 33. Célula de dithering ordenado por aglomeração.



(a)



(b)

Figura 34. Dithering ordenado com aglomeração de pixels.



(a)



(b)



(c)

Figura 35. Variação do tamanho da célula de dithering ordenado.

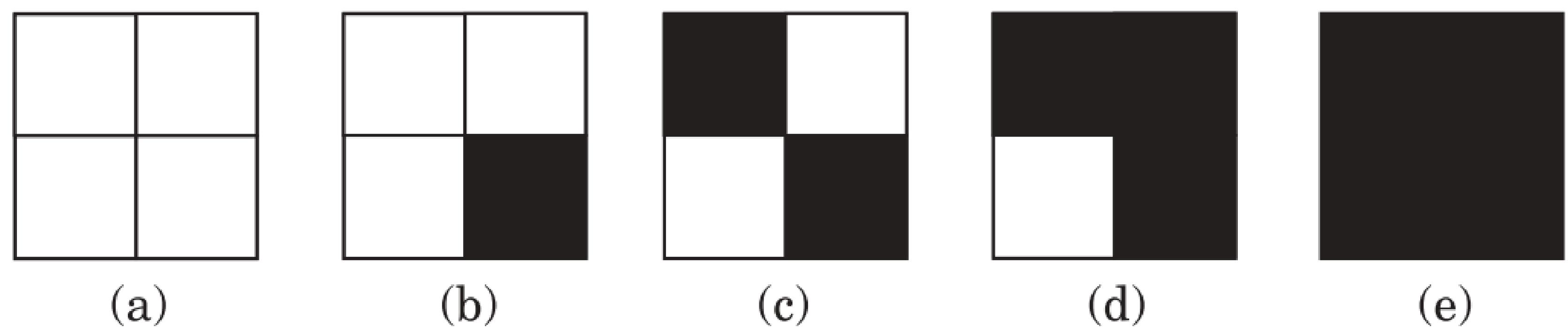


Figura 36. Distribuição das intensidades com dithering de Bayer de ordem 2.

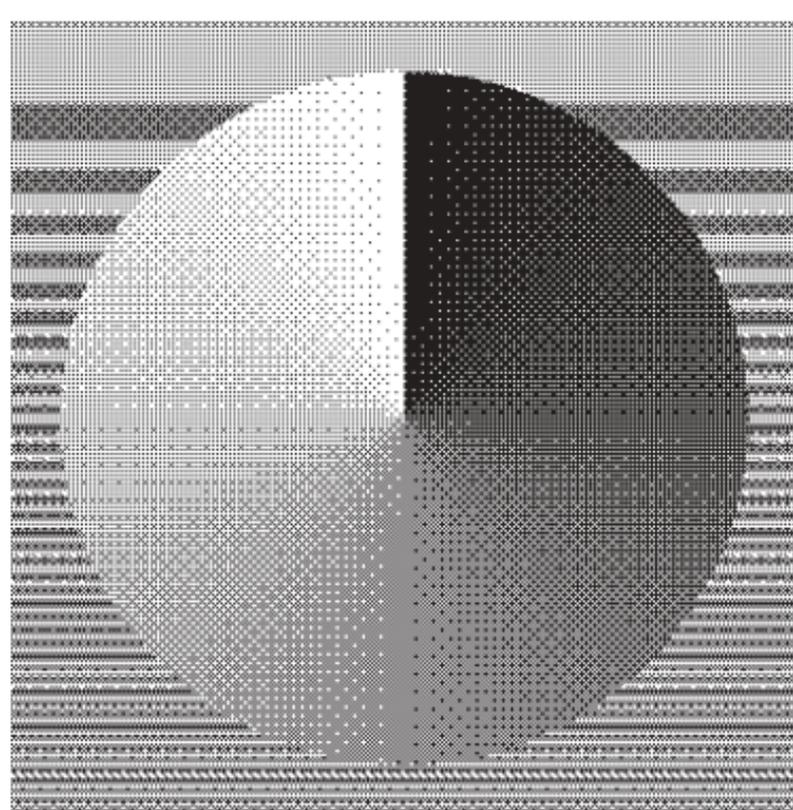


Figura 37. Dithering de bayer de ordem 4.

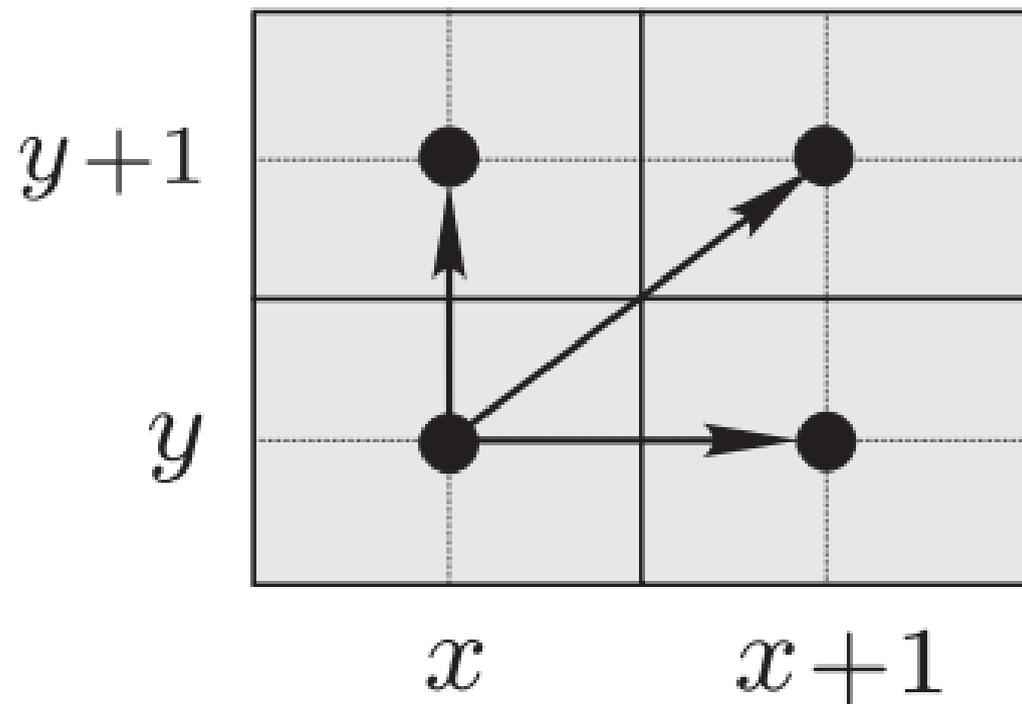


Figura 38. Propagação do erro no algoritmo de Floyd-Steinberg.

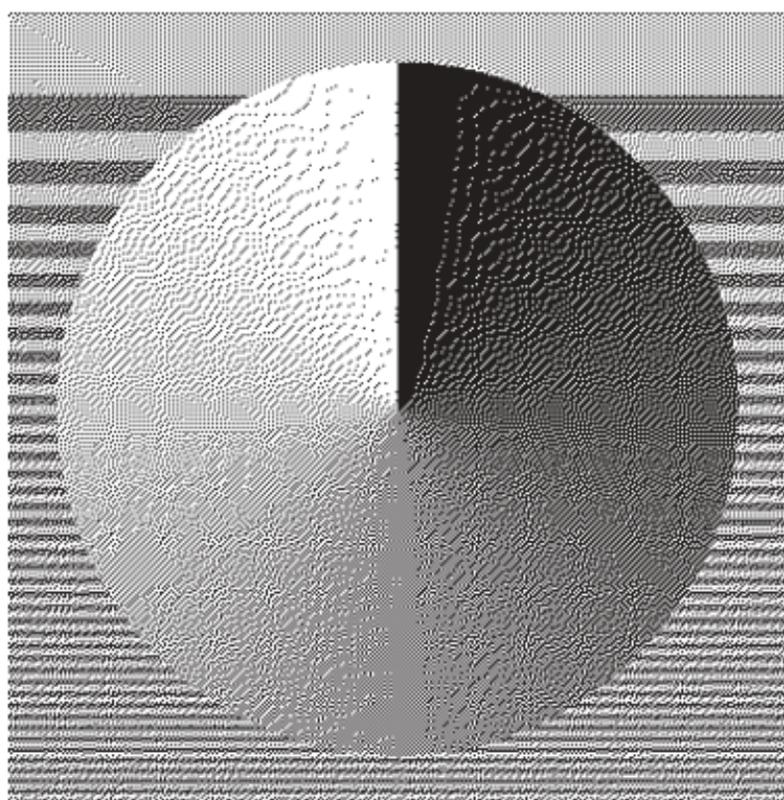


Figura 39. Dithering com o algoritmo de Floyd-Steinberg.



(a) Sem dithering.



(b) Com dithering.

Figura 40. Quantização de 24 para 8 bits (ver prancha 8, a cores).

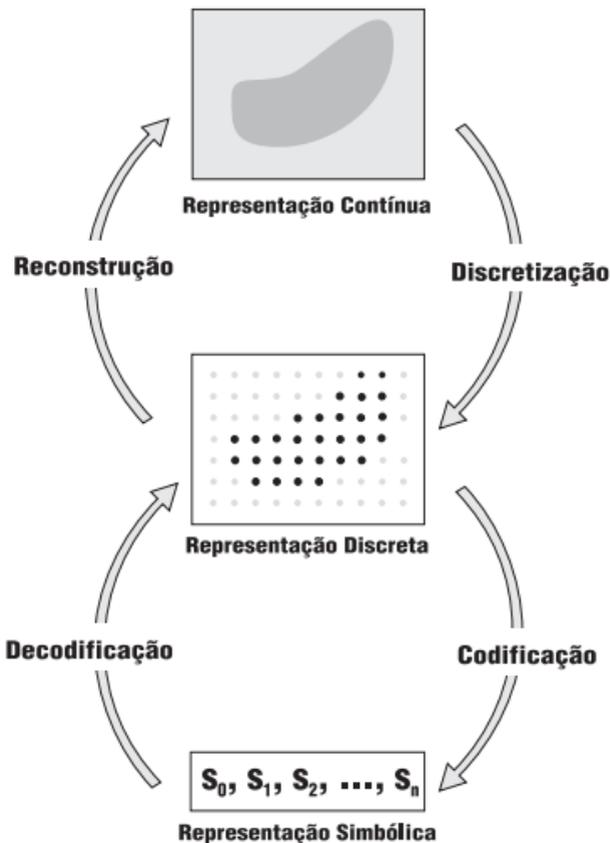
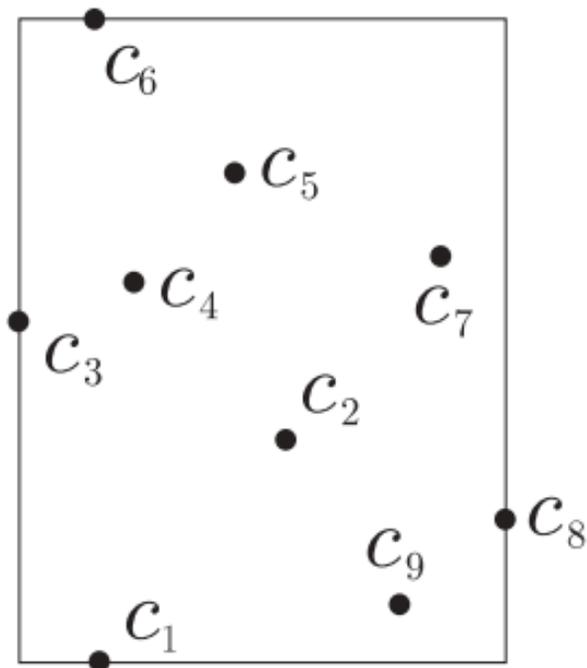


Figura 41. Níveis de abstração na representação de uma imagem.



(a)

<b>Cor</b>	<b>Frequência</b>
$c_1$	2
$c_2$	3
$c_3$	2
$c_4$	1
$c_5$	2
$c_6$	1
$c_7$	1
$c_8$	1
$c_9$	2

(b)

Figura 42.