

1. $F = C * (1 - \alpha * M) + B * \alpha * M$

2.

$\text{rowstart} = \text{Max}(0, y - R)$

$\text{rowend} = \text{Min}(y + R + 1, h)$

$\text{colstart} = \text{Max}(0, x - R)$

$\text{colend} = \text{Min}(x + R + 1, w)$

3.

3.1 $22 * 512 + 242 = \mathbf{11506}$

3.2 $\text{row} = 12345 / 512 = \mathbf{24}$

$\text{col} = 12345 \% 512 = \mathbf{57}$

3.3 $\mathbf{4}$

3.4 $4 * 512 = \mathbf{2048}$