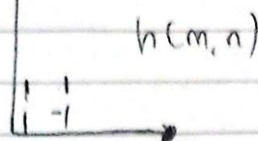
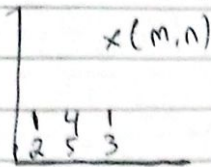


Latihan Soal Convolution 2D



$$g(m,n) = \sum_{k_1=-\infty}^{\infty} \sum_{k_2=-\infty}^{\infty} x(k_1, k_2) \cdot h((m-k_1), (n-k_2))$$

$h(m,n)$ dicerminkan terhadap titik pusat.



1 konvolusinya :

$$\begin{array}{ccc} & 1 & 4 & 1 \\ -1 & (1.2) & 5 & 3 \\ & 1 & 1 & \end{array} \Rightarrow -1(0) + 2.1 = 2$$

$$\begin{array}{ccc} & 1 & 4 & 1 \\ f & (1.2) & (1.5) & 3 \\ & 1 & 1 & \end{array} \Rightarrow -1(2) + 5.1 = 3 \quad (1)$$

$$\begin{array}{ccc} & 1 & 4 & 1 \\ 2 & (-1.5) & (3.1) & \\ & 1 & 1 & \end{array} \Rightarrow -1.5 + 3.1 = 2$$

$$\begin{array}{ccc} & 1 & 4 & 1 \\ 2 & 5 & (-1.3) & 1 \\ & 1 & 1 & \end{array} \Rightarrow -3.1 + 1(0) = 3$$

$$\begin{array}{ccc} -1 & (1.1) & 4 & 1 \\ & 1 & (1.2) & 5 & 3 \end{array} \Rightarrow 1(1) + 1(2) = 3$$

$$\begin{array}{ccc} (-1.1) & (1.4) & 1 \\ (1.2) & (1.5) & 3 \end{array} \Rightarrow -1.1 + 4.1 + 5.1 + 2.1 = 10 \quad (2)$$

$$\begin{array}{ccc} 1 & (-1.4) & (1.1) \\ 2 & (1.5) & (1.3) \end{array} \Rightarrow -4 + 5 + 1 + 3 = 5$$

$$\begin{array}{ccc} 1 & 4 & (-1.1) & 1 \\ 2 & 5 & (1.3) & 1 \end{array} \Rightarrow -1.1 + 3.1 + 1(0) + 1.0 = 2$$

$$\begin{array}{cccc} -1 & 1 & & \\ 1 & (1.1) & 4 & 1 \\ 2 & 5 & 3 & \end{array} \Rightarrow 1$$

(3)

$$\begin{array}{cccc} -1 & 1 & & \\ (1.6) & (1.4) & 1 & \\ 2 & 5 & 3 & \end{array} \Rightarrow 1+4=5$$

$$\begin{array}{cccc} -1 & 1 & & \\ 1 & (1.4) & (1.1) & \\ 2 & 5 & 3 & \end{array} \Rightarrow 4+1=5$$

$$\begin{array}{cccc} & -1 & 1 & \\ & 1 & 4 & (1.1) \\ 2 & 5 & 3 & \end{array} \Rightarrow 1$$

Hasil akhir: $g(\min) =$

1	5	5	1
3	10	5	2
2	3	-2	-3