

Convolutional Networks Quiz ANSWER KEY

1. (a) $\begin{bmatrix} 36 & 36 & 28 \\ 48 & 44 & 30 \\ 26 & 36 & 32 \end{bmatrix}$

(b) $\begin{bmatrix} 36 & 28 \\ 26 & 32 \end{bmatrix}$

(c) $\begin{bmatrix} 6 & 10 & 12 & 12 & 4 \\ 16 & 36 & 36 & 28 & 12 \\ 22 & 48 & 44 & 30 & 12 \\ 14 & 26 & 36 & 32 & 8 \\ 2 & 4 & 16 & 18 & 4 \end{bmatrix}$

2. (a) $\begin{bmatrix} 5 & 6 \\ 6 & 8 \end{bmatrix}$

(b) $\begin{bmatrix} \frac{11}{4} & 2 \\ \frac{13}{4} & \frac{19}{4} \end{bmatrix}$

3. (a) $W_2 = \frac{W_1 + 2P - F}{S} + 1$

(b) $H_2 = \frac{H_1 + 2P - F}{S} + 1$

(c) $D_2 = K$

4. (a) $W_2 = \frac{W_1 - F}{S} + 1$

(b) $H_2 = \frac{H_1 - F}{S} + 1$

(c) $D_2 = D_1$

For more information and explanations of Questions 3 and 4, see http://cs231n.github.io/convolutional-networks/ .
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5. A. 1-D Single channel B. 1-D Multichannel C. 2-D Single channel D. 2-D Multichannel
E. 3-D Single channel F. 3-D Multichannel

1. Audio preprocessed with Fourier transform C

2. Grayscale Image C

3. Audio Waveform A

4. Color image D

5. Color video F

6. Grayscale Video E

7. Volumetric Data (MRI, CT scan) E

6. b, d