Practice Questions on manually calculating the parameters of a CNN

$$\text{output width} = \frac{W - F_w + 2P}{S_w} + 1$$

$$\text{output height} = \frac{H - F_h + 2P}{S_h} + 1$$

Q1

Sr	Layer
1	Input Image (150x150x3)
2	Conv Layer (3x3x32), strides=1, pad=same
3	Max Pooling (2x2), strides=2
4	Conv Layer (3x3x64), strides=1, pad=same
5	Max Pooling (2x2), strides=2
6	Conv Layer (3x3x128), strides=1, pad=same
7	Max Pooling (2x2), strides=2
8	Fully Connected 64
9	Output Layer 1

Kernel Size	Input Size	No. of Kernels	Calculations	Output Size	Parameters
3×3	150×150×3	32	Weights: 3×3×3 = 27 27×32 = 864 Bias: 1×32 = 32 Total = 864+32	150×150×32	896
2×2	150×150×32			75×75×32	
3×3	75×75×32	64	Weights: 3×3×32 = 288 288×64 = 18432 Bias: 1×64 = 64 Total = 18432+64	75×75×64	18496
2×2	75×75×64			37×37×64	
3×3	37×37×64	128	Weights: 3×3×64 = 576 576×128 = 73728 Bias: 1×128 = 128 Total = 73728+128	37×37×128	73856
2×2	37×37×128			18×18×128	
			18×18×128 = 41472	41472	
			Weights: 64×41472 = 2654208 Bias: 64×1 = 64 Total: 2654208+64	64	2654272
			Weights: 1×64 = 64 Bias: 1×1 = 1 Total: 64+1	1	65
Total					2747585