Basic image processing

Quiz, 5 questions

1 point

1.

Consider linear contrast correction. Given $y_min = 10$ and $y_max = 207$, compute value of pixel with y = 54 after correction. Round result to the nearest integer.

For example, if you get 90.5, type 91

57

1 point

2.

Convolve a small (4x4 pixels) image *I* with a 2x2 kernel *K* and write result. Don't use any padding for convolution. Input integer output elements only. Place result of convolution in the variable *answer*.

```
1 I = [[8, 6, 2, 7], [6, 2, 4, 1], [5, 8, 5, 2], [3, 0, 3, 2]]
2 K = [[[4, 3], [7, 2]]
```

```
1 answer = [[84, 48, 69], [73, 76, 38], [75, 63, 41]] Run
Reset
```

1 point

3.

You are given images with unknown gamma correction parameters. Choose appropriate gamma for each image. Available gamma values are 0.5, 0.75, 1, 1.5, 2. Type in a comma-separated list of gamma values corresponding to the following list of images. Example of answer: 2, 1.5, 1, 0.75, 0.5

Image 1

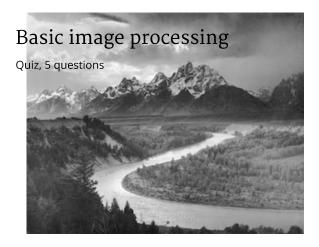


Image 2



Image 3



Image 4

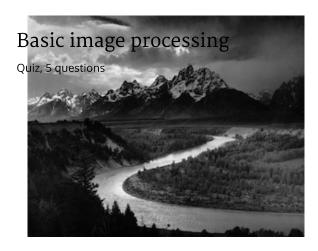


Image 5



0.5, 1.5, 2, 1, 0.75

1 point

4.

How many convolution operations are needed for canny edge detector?

3

1 point

5.

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Imagine that you want to store color images with alpha (opacity) channel. Four numbers are used for every pixel: Basiccinage processing ange [0..31] and one opacity value from range [0..63]. How many bits are used for