Module 3: Questions

1. Apply the horizontal Sobel edge detector to the following image patch. Use border values to extend the image where necessary.

```
10 | 20
-------
30 | 40
```

2. Apply the averaging blur filter to the following image patch. Use border values to extend the image where necessary. Round output values to nearest integer.

```
10 | 20
-------
30 | 40
```

3. Name the advantages and disadvantages of processing images at a higher resolution.

4. Threshold the following grayscale image using 127 as the threshold.

```
50 | 100
-------
150 | 200
```

5. Apply the Gaussian blur filter to the following image patch. Use border values to extend the image where necessary. Round output values to the nearest integer.

```
10 | 20
-------
30 | 40
```

6. All the lines running through a single point in Cartesian become what in the Hough space?

7. In Hough space, how are likely lines selected?

8. What does the zeroth order spatial moment represent?

9. What is meant by 24-bit color?

10. How can a color image be converted to grayscale?