# Lab 4. Task 1- preparation task Template for answers

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*Version (in case you need to re-submit): 1*

1. **Hough transform**

**1)** H1:



**2)** Your guess:

*60 degrees maybe*

**3)** What is the exact angle corresponding to the lines in ?

*65 degrees*

**4)** What is the angle of **clockwise** rotation to rotate to the horizontal level? Use your answer from problem 3.

*25 degrees, as 65 + 25 = 90*

**5)** Image1a\_rotated:

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**6)** What is the exact angle corresponding to the straight lines in ?

*-75 degrees*

**7)** What is the angle of **counterclockwise** rotation to rotate to horizontal level? Use your answer from problem 6.

*15 degrees*

**8)** Image1b\_rotated:

**En bild som visar skärmbild, cirkel, svart och vit, diagram**

**9)** Image1c with noise removed:

**En bild som visar cirkel, design, konst, illustration

Automatiskt genererad beskrivning**

**10)** Image1c\_clean (noise and lines removed):

**En bild som visar cirkel, skärmbild, Grafik, design

Automatiskt genererad beskrivning**

**11)** RGB-image displaying the 3 different classes of objects in different colors:

*![En bild som visar Färggrann, cirkel, skärmbild, Grafik

Automatiskt genererad beskrivning]()*

**12)** RGB-image displaying *the boundaries* of the 3 different classes of objects in different colors:

**13)** Your structuring element: SE = strel(‘disk’, 70) *Can’t see difference if I use 30 - 80*

Segmented image with all the grains of rice:



**14)** Labeled image, L, scaled by max value:

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**15)** What are the perimeters for the large objects (having area > 3000 pixels)?

*Some of the larger objects disappear around area > 7620. All objects disappear at*

*area > 7930.*

Image containing only the large objects:

En bild som visar cirkel

Automatiskt genererad beskrivning

**16)** What is your selected threshold value? *Threshold = 150*

What are the labels of the objects belonging to the class with the smallest perimeter?

*Unsure if correct but we think approximately 90 – 115 from the histogram*

**17)** What are the labels of the objects belonging to the class with the largest perimeter, and that has no holes?

Image containing only objects having the largest perimeter, without holes:

*Don’t forget to save the document as* ***.pdf*** *before submitting!*