CIS XXX – Homework 1

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Problem 1

This is the first problem. This is the first problem. This is the first problem. This is the first problem. This is the first problem. This is the first problem.

This is the second paragraph of the first problem. This equation $c^2 = a^2 + b^2 - 2ab\cos(\theta_C)$ is an example of in-line math.

And this is an example of display mode math:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

This is an example of the align* environment, which can be helpful for mathematical expressions with multiple steps:

$$\begin{aligned} r &= 1/2 + 1/3 + 1/4 + 1/5 + 1/6 + 1/7 + 1/8 + \ldots + 1/n \\ &> 1/2 + 1/4 + 1/4 + 1/8 + 1/8 + 1/8 + 1/8 + \ldots + 1/n \\ &= \sum_{i=1}^{\log_2 n} \frac{2^{i-1}}{2^i} \\ &= \frac{1}{2}\log_2(n) \\ &= \Omega(\log n) \end{aligned}$$

This is an example of matrices in LaTeX:

$$\sigma_x = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$$
$$\sigma_y = \begin{pmatrix} 0 & -i \\ i & 0 \end{pmatrix}$$
$$\sigma_z = \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}$$

This concludes the first problem and the mathematical examples. The following questions demonstrate how to use the template for multipart problems.

Problem 2

a) This is the second problem, first question. This is the second problem, first question. This is the second problem, first question. This is the second problem, first question. This is the second problem, first question. This is the second problem, first question.

b) This is the second problem, second question. This is the second problem, second question. This is the second problem, second question. This is the second problem, second question. This is the second problem, second question. This is the second problem, second question.

c) This is the second problem, third question. This is the second problem, third question. This is the second problem, third question. This is the second problem, third question. This is the second problem, third question. This is the second problem, third question.

Problem 3

This is an introduction to the the third problem.

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b) This is the third problem, second question. This is the third problem, second question. This is the third problem, second question. This is the third problem, second question. This is the third problem, second question. This is the third problem, second question.

c) This is the third problem, third question. This is the third problem, third question. This is the third problem, third question. This is the third problem, third question. This is the third problem, third question. This is the third problem, third question.

d) This is the third problem, fourth question. This is the third problem, fourth question. This is the third problem, fourth question. This is the third problem, fourth question. This is the third problem, fourth question. This is the third problem, fourth question.

Problem 4

And this is the final one. And this is the final one. And this is the final one. And this is the final one. And this is the final one. And this is the final one.

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