Columbia University
Science Olympiad

CUSO 2024– Test #1
Cybersecurity

Proctors: Geoffrey Wu, Connor Li

2024/01/27

Name(s): _____

School Name/School Code: _____

This exam contains ¡X¿ pages (including this cover page) and ¡X¿ questions. Total of points is ¡X¿. Good luck and Happy reading work!

Distribution of Marks

Section	Points	Score
1	65	
2	20	
3	15	

Section 1

ECC

[1] Write the general form of an elliptic curve.

[2] Consider the following elliptic curve $y^2 = x^3 + 2x + 3 \pmod 5$.

1. Find the number of points on the curve. List those points.

2. Find the order of the curve.

3. Find the generator of the curve.