NINA CHALGERI
nc653 @ scarletmail.rutgers.edu

① My career goals are not exactly clear. I have been considering consulting as a career. My goals are to find a stable job so I can help my family.

② My hobbies are more on the creative side. I love to draw for fun, play the piano, go on hikes, travel to new places, and hang out with my friends.

③ A rational number can be expressed as p/q where p and q are integers and q is not zero.

④ Let $\frac{a}{b}$ be a rational number and $\frac{c}{d}$ be a rational number. b and d are non zero.

· If we add these values, we get:

$$\frac{a}{b} + \frac{c}{d} = \frac{ad}{bd} + \frac{cb}{bd} = \frac{ad + cb}{bd}$$

· Let $(ad + cb) = p$ and $bd = q$

· Therefore, the sum of two rational number is p/q which means that the sum can be expressed as a fraction.

⑤ "Sum of two irrationals is always irrational"

$\sqrt{2}$ and $-\sqrt{2}$ are irrational

therefore,

$$\sqrt{2} + (-\sqrt{2}) = 0$$

and zero is a rational number

⑥ Prove that there are infinitely many primes.

- Assume that the list of primes is finite.

⑦ Prove that $\sqrt{5}$ is irrational

- Assume $\sqrt{5}$ is rational.

$$\frac{p}{q} = \sqrt{5}$$