

Getting to know you quiz

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1. My career goals ~~are~~ include working for a company with good morals, ~~that~~ making a positive difference in my community. As a statistics major, I would like to work in a field relating to data, as analytics interest me.
2. I am a member of the Rutgers University Marching Band, in which I play the saxophone. I am also interested in sports and listening to music.
3. A rational number is a number that can be expressed in the form of a fraction of two integers.
4. The sum of two rational numbers: $\frac{a}{b} + \frac{c}{d}$
$$\frac{a}{b} + \frac{c}{d} = \frac{ad}{bd} + \frac{bc}{bd} = \frac{ad+bc}{bd}$$

$ad, bc,$ and bd are integers. $ad+bc$ is an integer
 \therefore the sum of two rational numbers is a rational number.

5. $\sqrt{2}$ and $-\sqrt{2}$ are irrational, but
 $\sqrt{2} + (-\sqrt{2}) = 0$, 0 is rational.

This example proves that the sum of 2
irrational numbers is not always irrational.

6. unsure

7. If $\sqrt{5}$ were rational, then $\sqrt{5} = \frac{a}{b}$, $a, b \in \text{integers}$

$$5 = \frac{a^2}{b^2} \quad "$$

$$5b^2 = a^2$$

5 is a factor of a^2 , contradiction!