

Concordia University MATH/SCI BOWL

Sample Questions

The following is a list of sample questions. Due to the fact that our source for questions may vary from year to year, these are meant for illustration only and may not represent the exact style, form, length, difficulty, etc. of the questions used in the tournament.

1. Human beings are usually born with two arms, two legs, and one nose. Most are also usually born with 23 pairs of something else. For ten points, pairs of what?
2. Metrics are the standard throughout much of the world. For 10 points, tell me, to the nearest inch, how many inches are there in a meter?
3. In 1943, Emil Gagnan and Jacques Cousteau developed a submarine appliance known as SCUBA. For ten points, what does this acronym stand for?
4. At a height of about 15 miles, this layer of atmosphere absorbs harmful rays from the sun. For ten points, name this layer that is made up of O₃ molecules.
5. You are given a globe for your birthday. Out of sheer excitement, you measure its diameter and find it to be two feet. For ten points, what is the volume of your new globe?
6. These phenomena were observed in 1054, 1572, 1604, and again in 1987. For ten points, which term, derived from the Latin words meaning "above" and "new," names a star that erupts so explosively that it tears itself apart?

- Solutions:**
1. Chromosomes
 2. 39 inches (39.37 inches)
 3. Self-Contained Underwater Breathing Apparatus
 4. Ozone layer
 5. $4\pi/3$ cubic feet (4.19 cu. feet)
 6. Supernova

Sample Bonus Questions

- For ten points apiece, I will give you two sets of waves from the electromagnetic spectrum. You are to indicate, out of the sets, which has the shortest wavelength.
 - Radio, radar, or television
 - Ultraviolet, infrared, or microwave

- For ten points each, in exponential notation, using base 10, state the following numbers:
 - One million times one trillion
 - One decillion times one millionth

- There are two temperate zones of the earth, each having four seasons per year. For ten points each, between what two imaginary lines paralleling 23 and one half degrees north and 66 and one half degrees north does the northern temperate zone occur?

- A certain right triangle has an acute angle equal to 42 degrees. For ten points each,
 - What is the measurement of the other two angles?
 - If we were working in hyperbolic geometry, what property of triangles would make the previous question impossible to answer with the given data?

- For ten points each:
 - This man viewed an electron as a particle and stated that there is always uncertainty regarding an individual electron's location and momentum. Name this German.
 - This man viewed the electron as a wave and his equation used four quantum numbers in describing its behavior. Name this Austrian.