

# The Arecibo Message - quiz sheet answers

## Question 1 (5 points)

Element 1 - **Hydrogen** (H), atomic number 1

Element 6 - **Carbon** (C), atomic number 6

Element 7 - **Nitrogen** (N), atomic number 7

Element 8 - **Oxygen** (O), atomic number 8

Element 15 - **Phosphorus** (P), atomic number 15

*Bonus: these are the chemical elements which make up DNA.*

## Question 2

The Earth's population in 1974 was around **4 billion** people

Bonus: Since then the number of people has doubled and in 2024 there are around **8.2 billion** of us.

## Question 3

In 1974 Pluto was still categorised as a planet but it lost this status in 2006 when it was officially reclassified as a dwarf planet.

Taking the largest 9 yellow pixels as our Sun then from left to right the order of planets in the image is Mercury, Venus, EARTH, Mars, Jupiter, Saturn, Uranus and Pluto. Earth is the third planet from the Sun in the solar system and the Earth pixel has been moved slightly closer to the humanoid figure to indicate that this is our home planet.

## Questions 4 and 5

*The wavelength of the carrier radio wave is 12.6cm (or 126mm or 0.126 metres)*

- The width of the telescope is 2,430 units x 12.6cm = 30,618cm or approx 306 metres (a little over a thousand feet)
- The height of the humanoid is 14 units x 12.6cm = 176.4cm or 1.76 metres (around 5 feet 9 inches)