

QUESTIONS

ROUND

1 PHYSICS

1. Will the rays of light that pass through a convex lens focus on a point (converge), or spread out (diverge)?
2. Does sound travel faster in water or in air?
3. In which state is the Australian Square Kilometre Array Pathfinder (ASKAP) telescope located?
4. Augustin-Jean Fresnel is known for his contributions to which branch of physics: a) chaos theory, b) optics, or c) fluid dynamics?
5. Which has the greater mass: an electron or a proton?

ROUND

2 CHEMISTRY

1. Name one of the chemical elements named after a modern-day country.
2. Who invented dynamite?
3. If you leave ice outside on a hot day it melts. What happens to solid carbon dioxide (dry ice) under the same conditions?
4. Diamonds are made of which element?
5. An Australian 20 cent piece is made of which two elements?

ROUND

3 EARTH SCIENCES

1. In meteorology, is pyroCb a type of: a) cloud, b) wind, or c) weather vane?
2. Is the benthic zone found at the surface or the bottom of the ocean?
3. In which two months do the equinoxes occur?
4. Lignite and anthracite are types of which substance?
5. What sort of light do heliostats reflect?

ROUND

4 PLANTS AND ANIMALS

1. What colour is the pigment lycopene?
2. What do most people do with the ova of *Gallus gallus domesticus*?
3. How many wings do dragonflies have?
4. Which animal has the largest brain?
5. How many legs does a retro slider have?

ROUND

5 MEDICINE

1. What type of animal is the main carrier of the Hendra virus?
2. Which component of blood is responsible for clotting?
3. In the human body, where would you find hamstrings?
4. What are replicated in mitosis?
5. In DNA, what base does guanine pair with?

ROUND

6 MATHS

1. How many faces does a triangular pyramid have?
2. George has lots of pets. Half of his pets are cats, and a third of his pets are dogs. Apart from the cats and dogs, he also has one pet lizard. How many pets does he have in total?
3. Is 57 a prime number?
4. How many digits are in one million?
5. Who proved Fermat's last theorem?

ROUND

7 SPACE

1. What passes between Earth and the Sun to cause a solar eclipse?
2. Who was the first person to walk on the Moon?
3. Visible at night, it was called the 'via lactea' in Latin, while the ancient Greeks referred to it as 'galaxias kyklos'. What is it?
4. If you were standing at the equator watching a satellite in geostationary orbit in the sky, in what shape path would it appear to move?
5. What powers the Hubble Space Telescope?

ROUND

8 TRUE OR FALSE?

1. Airports at high altitudes need longer runways than airports at sea level.
2. Diamond conducts heat better than copper.
3. On a weather map, isobars connect points of equal wind speed.
4. Peanuts are not considered to be a true nut by botanists.
5. Two positive charges will be attracted to each other.
6. Distilled water conducts electricity better than salt water.
7. Magnetic termite mounds tend to align north to south.
8. The Leeuwin Current is found in the Indian Ocean.
9. Bees that fly through the air tend to have a negative charge.
10. Retinitis pigmentosa affects the sense of sight.