

Mathematical Constants and Scientific Quantities

Mathematics And Science · Practice Test · 15 Questions

1. The atomic number of Oxygen is 8 and Silicon is 14. What is the sum of these atomic numbers?

- A) 20
- B) 22
- C) 24
- D) 26

2. If a planet has a mean orbital distance from the Sun of 0.72 AU (Venus) and 1.00 AU (Earth), what is the sum of these distances?

- A) 1.72 AU
- B) 1.75 AU
- C) 1.82 AU
- D) 1.92 AU

3. The freezing point of water is 0 degrees Celsius and the boiling point is 100 degrees Celsius. In Kelvin, these are approximately 273.15 and 373.15 respectively. What is the sum of the Kelvin values?

- A) 546.30
- B) 646.30
- C) 647.30
- D) 746.30

4. A light-year is approximately 9.46 trillion km. If an object is 2 light-years away, what is the total distance in trillion km?

- A) 18.92
- B) 19.46
- C) 18.46
- D) 20.92

5. Carbon has an atomic mass of approximately 12.011 u, and Hydrogen has 1.008 u. What is the total atomic mass of a molecule with one Carbon and four Hydrogen atoms (CH₄)?

- A) 16.033 u
- B) 16.043 u
- C) 16.053 u
- D) 17.043 u

6. Standard atmospheric pressure at sea level is 101.325 kPa. If a gauge pressure reading shows an additional 15.675 kPa, what is the total absolute pressure in kPa?

- A) 116.000
- B) 117.000
- C) 118.000
- D) 126.000

7. The planet Mercury completes an orbit in 88 days and Mars in 687 days. What is the sum of these orbital periods?

- A) 775 days
- B) 765 days
- C) 755 days
- D) 785 days

8. The speed of light in a vacuum is approximately 299,792 km/s. If a signal takes 2 seconds to travel a distance, what is the total distance covered (km)?

- A) 599,584
- B) 598,584
- C) 600,584
- D) 599,684

9. A standard gram-mole of Neon has a mass of 20.18 grams and Helium has 4.00 grams. What is the total mass if you have one mole of each?

- A) 23.18 g
- B) 24.18 g
- C) 25.18 g
- D) 26.18 g

10. The radius of the Earth is approximately 6,371 km. If a satellite orbits at an altitude of 35,786 km, what is the distance from the center of the Earth to the satellite?

- A) 41,157 km
- B) 42,157 km
- C) 43,157 km
- D) 44,157 km

11. The sum of protons and neutrons in a nucleus is the mass number. If an isotope has 26 protons and 30 neutrons, what is the mass number?

- A) 54
- B) 56
- C) 58
- D) 60

12. If an object weighs 15.5 kg on Earth and you add a payload of 4.75 kg, what is the new total mass in kg?

- A) 19.25
- B) 20.25
- C) 21.25
- D) 20.05

13. The circumference of the Earth at the equator is 40,075 km. If you subtract the polar circumference of 40,008 km, what is the difference?

- A) 67 km
- B) 77 km
- C) 87 km
- D) 97 km

14. The half-life of Carbon-14 is 5,730 years. If you add two half-lives together, how many total years have passed?

- A) 10,460
- B) 11,460
- C) 12,460
- D) 13,460

15. A circle has 360 degrees. If you subtract the sum of two right angles (180 degrees), what is the remaining value?

- A) 90
- B) 180
- C) 270
- D) 360