

Practice Questions

Toss-Up

1. LIFE SCIENCE: *multiple choice* What organelle functions to isolate a human cell's chromosomes from the cytoplasm?

W) Mitochondria

X) Ribosomes

Y) Nucleus

Z) Cell Wall

ANSWER: Y) NUCLEUS

Bonus

LIFE SCIENCE: *short answer* What is the primary oxygen-carrying protein in red blood cells?

ANSWER: HEMOGLOBIN

TOSS-UP

2. PHYSICAL SCIENCE: *short answer* What physical state of matter is intermediate between a solid and a gas?

ANSWER: LIQUID

BONUS

PHYSICAL SCIENCE: *short answer* What subatomic particle has a negative charge?

ANSWER: ELECTRON

TOSS-UP

3. EARTH AND SPACE: *short answer* What is the general name for rising and falling of sea levels in response to the forces exerted by the Moon and Sun?
ANSWER: TIDES

BONUS

EARTH AND SPACE: *multiple choice* Approximately what fraction of the Earth's surface is covered by oceans:

- W) one-half
- X) two-thirds
- Y) seven-tenths
- Z) four-fifths

ANSWER: Y) seven-tenths

TOSS-UP

4. MATH : *short answer* How many degrees are in a right angle?
ANSWER Ninety degrees (90)

BONUS

MATH: *multiple choice* Round the number 535,279 to the nearest ten-thousand:

- W) 500,000
- X) 530,000
- Y) 535,000
- Z) 540,000

ANSWER Z) 540,000

TOSS-UP

5. GENERAL SCIENCE: *multiple choice* What piece of laboratory equipment is used to measure volume of a liquid?
- W) triple beam balance
 - X) beaker
 - Y) graduated cylinder
 - Z) test tube

ANSWER: Y) graduated cylinder

BONUS

GENERAL SCIENCE : *short answer* How many centimeters are in 3.6 meters?
ANSWER 360 CENTIMETERS

TOSS-UP

6. LIFE SCIENCE: *multiple choice* How many permanent teeth does a typical adult human have?
- W) 32
 - X) 132
 - Y) 16
 - Z) 40

ANSWER: W) 32

BONUS

LIFE SCIENCE: *multiple choice* You find a new creature measuring over 4 millimeters in size in your bedroom. You notice that it has 6 legs so you know it is some type of:

- W) Arachnid
- X) Larva
- Y) Insect
- Z) Echinoderm

ANSWER: Y) INSECT

TOSS-UP

7. PHYSICAL SCIENCE: *multiple choice* What is the chemical symbol for copper?

- W) C
- X) Ca
- Y) Cd
- Z) Cu

ANSWER: Z) Cu

BONUS

PHYSICAL SCIENCE: *short answer* What term do scientists use for the force of gravity acting on anything that has mass?

ANSWER: WEIGHT

TOSS-UP

8. EARTH AND SPACE: *multiple choice* Which planet is furthest from the Sun?

- W) Earth
- X) Saturn
- Y) Neptune
- Z) Jupiter

ANSWER: Y) NEPTUNE

BONUS

EARTH AND SPACE: *short answer* What is the name of all the Great Circles that pass through the north and south poles?

ANSWER: LONGITUDES (ACCEPT: MERIDIANS)

TOSS-UP

9. MATH: *short answer* Every triangle has how many vertices?

ANSWER: 3

BONUS

MATH: *short answer* Simplify $\frac{8}{52}$ to a fraction in simplest terms.

ANSWER: $\frac{2}{13}$

TOSS-UP

10. GENERAL SCIENCE: *multiple choice* What is the SI base unit for length?

- W) kilometer
- X) meter
- Y) centimeter
- Z) millimeter

ANSWER: X) meter

BONUS

GENERAL SCIENCE: *multiple choice* Sometimes brightly colored signs advertising a place use a noble gas. Which noble gas is commonly used to make the signs?

- W) Neon
- X) Helium
- Y) Argon
- Z) Xenon

ANSWER: W) NEON

TOSS-UP

11. PHYSICAL SCIENCE: *multiple choice* Which of the following is a simple machine:
W) pulley
X) bicycle
Y) refrigerator
Z) computer

ANSWER: W) pulley

BONUS

PHYSICAL SCIENCE: *multiple choice* During which physical change do particles become more ordered?

- W) melting
X) evaporation
Y) boiling
Z) freezing

ANSWER: Z) freezing

TOSS-UP

12. MATH: *short answer* Write 50% as a decimal.
ANSWER: $\frac{1}{2}$

MATH: *short answer* Solve for x: $10 + 5x = 20$
ANSWER: 2

TOSS-UP

13. LIFE SCIENCE: *multiple choice* Which of the following is NOT a structure found in human cells:
W) Mitochondria
X) Ribosomes
Y) Nucleus
Z) Cell Wall

ANSWER: Z) Cell wall

BONUS

LIFE SCIENCE: *multiple choice* Which of the following is the study of spiders:

- W) arachnology
- X) dendrochronology
- Y) planktology
- Z) lepidopterology

ANSWER: W) arachnology

TOSS-UP

14. PHYSICAL SCIENCE: *multiple choice* With an atomic number of 17, how many protons does the element chlorine have?

- W) 17
- X) 34
- Y) 8
- Z) 41

ANSWER: W) 17

BONUS

PHYSICAL SCIENCE: *multiple choice* Chlorine is in group 17 on the periodic table. What is the name of this group or family?

- W) Alkali metals
- X) Noble gases
- Y) Halogens
- Z) Transition metals

ANSWER: Y) Halogen

TOSS-UP

15. GENERAL SCIENCE: *multiple choice* Which of the following is a heterogeneous mixture:

- W) sugar solution
- X) rubbing alcohol
- Y) mixture of hydrogen and oxygen
- Z) iron shavings and sulfur

ANSWER: Z) iron shavings and sulfur

BONUS

GENERAL SCIENCE: *short answer* What is the average Celsius temperature of a human body?

ANSWER: 37

TOSS-UP

16. MATH : *short answer* If a car travels at a rate of 50 miles per hour, what is the distance, in miles, traveled in 5 hours?

ANSWER 250 miles

BONUS

MATH: *short answer* Add the following 2 fractions and give your answer as a mixed fraction in lowest terms: $2\frac{3}{2} + 2\frac{3}{4}$

ANSWER 14 $\frac{1}{4}$

TOSS-UP

17. EARTH AND SPACE: *multiple choice* What is the most abundant element in the Sun?

- W) nitrogen
- X) oxygen
- Y) fluorine
- Z) hydrogen

ANSWER: Z) hydrogen

BONUS

EARTH AND SPACE: *short answer* What is the name of the atomic process that provides the energy for a star to shine?

ANSWER fusion

TOSS-UP

18. MATH: *multiple choice* A class of 10 students earns the following 10 grades: 100, 80, 79, 40, 75, 90, 74, 100, 100. What is the median grade?
- W) 80
 - X) 83.3
 - Y) 85
 - Z) 90

ANSWER: Y) 85

BONUS

MATH: *multiple choice* Which of the following statements is NOT true about the diagonals of a rectangle?

- W) They are always congruent.
- X) They are always perpendicular.
- Y) They always bisect each other.
- Z) They intersect at one point

ANSWER: X) They are always perpendicular.

TOSS-UP

19. PHYSICAL SCIENCE: *multiple choice* Which of the following is NOT a method by which heat travels?
- W) radiation
 - X) convection
 - Y) conduction
 - Z) convection

ANSWER: Z) convection

BONUS

PHYSICAL SCIENCE: *short answer* Materials are heated in an autoclave to very high temperatures to kill organisms. If the temperature of the autoclave is 121 Celsius, what is the temperature in Kelvin to the nearest whole number?

ANSWER: 394

TOSS-UP

20. GENERAL SCIENCE: *multiple choice* Who is given credit for inventing the first telescope used in astronomy?

- W) Einstein
- X) Galileo
- Y) Kepler
- Z) Copernicus

ANSWER: X) Galileo

BONUS

PHYSICAL SCIENCE: *Short answer* What element is the most abundant in the atmosphere?

ANSWER: nitrogen