

ROUND 2

TOSS-UP

1) PHYSICAL SCIENCE *Short Answer* What is the most common term for the energy an object has because of its position or configuration?

ANSWER: POTENTIAL

BONUS

1) PHYSICAL SCIENCE *Short Answer* Which one of the four basic forces of the universe is most directly involved with maintaining the planets in their orbits?

ANSWER: GRAVITY

TOSS-UP

2) EARTH SCIENCE *Short Answer* Based on size and location, which of the 2 basic types of glaciers dominates Greenland today?

ANSWER: CONTINENTAL (ACCEPT: ICE SHEET)

BONUS

2) EARTH SCIENCE *Multiple Choice* Which of the following fossils is the oldest:

- W) trilobite
- X) snake
- Y) petrified wood
- Z) megalodon tooth

ANSWER: W) TRILOBITE

TOSS-UP

3) MATH *Short Answer* What is the measure, in degrees, of each angle in an equilateral triangle?

ANSWER: 60 (ACCEPT: 60, 60, 60)

BONUS

3) MATH *Short Answer* Reduce the following fraction to a proper fraction in lowest terms:

$$\frac{125}{1000}$$

ANSWER: $\frac{1}{8}$

TOSS-UP

4) GENERAL SCIENCE *Multiple Choice* Which of the following can sometimes result after a moderate to severe blow to the head:

- W) Down syndrome
- X) meningitis
- Y) impetigo
- Z) concussion

ANSWER: Z) CONCUSSION

BONUS

4) GENERAL SCIENCE *Short Answer* What is the year of a person's death who was born in the year 580 BC and lived 63 years?

ANSWER: 517 BC (ACCEPT: 517)

TOSS-UP

5) LIFE SCIENCE *Short Answer* How many limbs are tetrapods typically considered to have?

ANSWER: 4

BONUS

5) LIFE SCIENCE *Multiple Choice* Which of the following is the most common source of energy for brain cells in humans:

- W) nucleic acids
- X) proteins
- Y) glucose
- Z) pectins

ANSWER: Y) GLUCOSE

TOSS-UP

6) PHYSICAL SCIENCE *Short Answer* What is the most common term for the ratio of the output force to the input force of a simple machine?

ANSWER: MECHANICAL ADVANTAGE (ACCEPT: ACTUAL MECHANICAL ADVANTAGE)

BONUS

6) PHYSICAL SCIENCE *Multiple Choice* Which of the following most directly contributes to the actual mechanical advantage always being less than the ideal mechanical advantage:

- W) the basic design of any machine
- X) friction
- Y) how simple machines are combined
- Z) the input distance always being less than the output distance

ANSWER: X) FRICTION

TOSS-UP

7) EARTH SCIENCE *Multiple Choice* Which of the following is NOT a mineral:

- W) quartz
- X) topaz
- Y) basalt
- Z) diamond

ANSWER: Y) BASALT

BONUS

7) EARTH SCIENCE *Multiple Choice* Which of the following is the hottest region of planet Earth:

- W) the mantle
- X) the inner core
- Y) the outer core
- Z) the crust

ANSWER: X) THE INNER CORE

TOSS-UP

8) MATH *Short Answer* Find the volume, in inches cubed, of a rectangular solid whose dimensions are 3-inches by 5-inches by 8-inches:

ANSWER: 120

BONUS

8) MATH *Short Answer* Convert 150% into a mixed fraction in lowest terms:

ANSWER: $1\frac{1}{2}$

TOSS-UP

9) GENERAL SCIENCE *Short Answer* What is the kelvin temperature that represents a condition of no molecular motion?

ANSWER: 0 (ACCEPT: ABSOLUTE ZERO)

BONUS

9) GENERAL SCIENCE *Short Answer* How many grams are in 1 metric ton?

ANSWER: 1 MILLION (ACCEPT: 1×10^6)

TOSS-UP

10) LIFE SCIENCE *Short Answer* What is the ultimate energy source for nearly all life on Earth?

ANSWER: THE SUN

BONUS

10) LIFE SCIENCE *Short Answer* What is the environmental factor most directly involved in phototropism?

ANSWER: LIGHT (ACCEPT: SUNLIGHT or SUN)

TOSS-UP

11) PHYSICAL SCIENCE *Multiple Choice* If a chimpanzee were to throw darts at a Periodic Table, he would most likely hit an element with which of the following characteristics:

- W) a naturally radioactive element
- X) a solid at room temperature
- Y) a gas at room temperature
- Z) a liquid at room temperature

ANSWER: X) A SOLID AT ROOM TEMPERATURE

BONUS

11) PHYSICAL SCIENCE *Multiple Choice* Which of the following has the most inertia:

- W) 1 kilogram of iron
- X) 2 kilograms of flour
- Y) 5 newtons of iron
- Z) 4 kilograms of iron

ANSWER: Z) 4 KILOGRAMS OF IRON

TOSS-UP

12) EARTH SCIENCE *Multiple Choice* Which of the following is the BEST example of the chemical weathering of rock:

- W) cracking of rock by plant roots
- X) rain percolating through limestone
- Y) frost action
- Z) abrasion

ANSWER: X) RAIN PERCOLATING THROUGH LIMESTONE

BONUS

12) EARTH SCIENCE *Short Answer* What is the name for the “river” of high altitude wind over North America that marks the southern boundary between polar air to the north and warmer air to the south?

ANSWER: POLAR JET STREAM (ACCEPT: JET STREAM)

TOSS-UP

13) MATH *Multiple Choice* Minuends and subtrahends are used in which of the following mathematical operations:

- W) addition
- X) subtraction
- Y) multiplication
- Z) division

ANSWER: X) SUBTRACTION

BONUS

13) MATH *Short Answer* If the area of a square field is 1,600 square feet, how many feet long is one of its sides?

ANSWER: 40

TOSS-UP

14) GENERAL SCIENCE *Short Answer* What is the general name for a plastic material composed of a polymer of styrene?

ANSWER: POLYSTYRENE (ACCEPT: STYROFOAM)

BONUS

14) GENERAL SCIENCE *Multiple Choice* Which of the following is a product found in most toothpastes for the purpose of making the teeth more resistant to decay by promoting remineralization:

- W) fluoride
- X) melamine
- Y) titanium dioxide
- Z) diethylene glycol

ANSWER: W) FLUORIDE

TOSS-UP

15) LIFE SCIENCE *Short Answer* What is the scientific name of the human windpipe?

ANSWER: TRACHEA

BONUS

15) LIFE SCIENCE *Short Answer* The organ of Corti is directly involved in what human sense?

ANSWER: HEARING

TOSS-UP

16) PHYSICAL SCIENCE *Multiple Choice* Which of the following is TRUE regarding mixing pigments:

- W) violet is typically considered a primary color for pigments
- X) only primary pigment colors can be mixed to give other colors
- Y) as more pigments are mixed, the darker the resulting mixture becomes
- Z) magenta and cyan are complementary pigment colors

ANSWER: Y) AS MORE PIGMENTS ARE MIXED, THE DARKER THE RESULTING MIXTURE BECOMES

BONUS

16) PHYSICAL SCIENCE *Short Answer* What color will a red colored object appear to a human if it is illuminated by a red light?

ANSWER: RED

TOSS-UP

17) EARTH SCIENCE *Multiple Choice* Which of the following is often the LEAST reliable property of a mineral that is used in mineral identification:

- W) magnetism
- X) specific gravity
- Y) color
- Z) cleavage

ANSWER: Y) COLOR

BONUS

17) EARTH SCIENCE *Multiple Choice* Which of the following terms best describes the streak of a mineral:

- W) wavy
- X) tabular
- Y) translucent
- Z) brown

ANSWER: Z) BROWN

TOSS-UP

18) MATH *Short Answer* What is the identity element for addition on the integers?

ANSWER: 0

BONUS

18) MATH *Short Answer* The sum of two numbers is 16 and their product is 55. What are the two numbers?

ANSWER: 11; 5 (in any order)

TOSS-UP

19) GENERAL SCIENCE *Multiple Choice* Which of the following best describes a smaller stream that merges with a larger stream:

- W) delta
- X) rip-rap
- Y) streamer
- Z) tributary

ANSWER: Z) TRIBUTARY

BONUS

19) GENERAL SCIENCE *Multiple Choice* Which of the following is a structural adaptation of ducks that is most helpful in keeping them dry:

- W) an oil-producing gland
- X) hollow fur
- Y) darkly colored plumage
- Z) ability to float

ANSWER: W) AN OIL-PRODUCING GLAND

TOSS-UP

20) LIFE SCIENCE *Multiple Choice* Which of the following is the closest synonym for motile:

- W) having a motor
- X) using energy
- Y) able to move
- Z) living in water

ANSWER: Y) ABLE TO MOVE

BONUS

20) LIFE SCIENCE *Multiple Choice* Which of the following terms is used by microbiologists for a bacterium with a rod shape:

- W) tubular
- X) bacillus
- Y) trichome
- Z) cylindrical

ANSWER: X) BACILLUS

TOSS-UP

21) PHYSICAL SCIENCE *Short Answer* What nucleon balances the charge of electrons to give an atom a neutral state?

ANSWER: PROTON(S)

BONUS

21) PHYSICAL SCIENCE *Short Answer* Nitrogen has 7 protons. What is the atomic mass of its common isotope, rounded to the nearest whole number?

ANSWER: 14

TOSS-UP

22) EARTH SCIENCE *Short Answer* What molecular substance is believed to be the most basic requirement or signature for life to exist on a planet?

ANSWER: WATER (ACCEPT: H₂O)

BONUS

22) EARTH SCIENCE *Short Answer* What planets are able to pass between the Earth and the Sun?

ANSWER: MERCURY; VENUS

TOSS-UP

23) MATH *Short Answer* Evaluate the following, giving your answer as a proper fraction in simplest terms: $\left(-\frac{12}{8}\right)\left(-\frac{4}{12}\right)$

ANSWER: $\frac{1}{2}$

BONUS

23) MATH *Short Answer* Find the area, in meters squared, of a parallelogram whose base measures 8 meters and height measures 10 meters:

ANSWER: 80

(Solution: $A = bh = 80 \text{ m}^2$)

TOSS-UP

24) GENERAL SCIENCE *Multiple Choice* The lead-acid battery is most commonly found in:

- W) automobiles
- X) cell phones
- Y) flashlights
- Z) laptop computers

ANSWER: W) AUTOMOBILES

BONUS

24) GENERAL SCIENCE *Short Answer* From what biological polymer is paper primarily composed?

ANSWER: CELLULOSE

TOSS-UP

25) LIFE SCIENCE *Short Answer* What is the common name of the members of the Class Aves?

ANSWER: BIRDS

BONUS

25) LIFE SCIENCE *Short Answer* Name all of the following 3 groups of animals that are vertebrates: amphibians; reptiles; gastropods

ANSWER: AMPHIBIANS; REPTILES