

ROUND 2

TOSS-UP

1) PHYSICAL SCIENCE *Short Answer* What is the most common scientific term for a change in velocity over time?

ANSWER: ACCELERATION

BONUS

1) PHYSICAL SCIENCE *Short Answer* What is the mass, in grams, of a 1 kilogram object on a planet with a gravitational force of 3 meters per second squared?

ANSWER: 1,000

TOSS-UP

2) EARTH SCIENCE *Short Answer* What molecular substance is primarily responsible for moderating wide changes in temperatures on Earth?

ANSWER: WATER

BONUS

2) EARTH SCIENCE *Multiple Choice* Which of the following is the process by which water vapor changes directly into rain:

- W) sublimation
- X) evaporation
- Y) transpiration
- Z) condensation

ANSWER: Z) CONDENSATION

TOSS-UP

3) MATH *Short Answer* What are the multiplicative inverse and additive inverse of $-\frac{5}{3}$, respectively?

ANSWER: MULTIPLICATIVE INVERSE = $-\frac{3}{5}$; ADDITIVE INVERSE = $\frac{5}{3}$

BONUS

3) MATH *Short Answer* If 12 gallons of gasoline costs \$36.00, what would 1 quart cost, in cents?

ANSWER: 75 CENTS

TOSS-UP

4) GENERAL SCIENCE *Multiple Choice* Which of the following is a coniferous tree:

- W) poplar
- X) oak
- Y) elm
- Z) fir

ANSWER: Z) FIR

BONUS

4) GENERAL SCIENCE *Multiple Choice* Which of the following pieces of laboratory glassware would be used to MOST accurately measure 1000 milliliters of water:

- W) 1000 milliliter volumetric flask
- X) 1000 milliliter beaker
- Y) 1000 milliliter Erlenmeyer flask
- Z) two, 500 milliliter Erlenmeyer flasks

ANSWER: W) 1000 MILLILITER VOLUMETRIC FLASK

TOSS-UP

5) LIFE SCIENCE *Short Answer* Found in humans and quite prominent in dogs, what is the name of the conical-shaped tooth used in tearing muscle and other foods and assisting in cutting?

ANSWER: CANINE

BONUS

5) LIFE SCIENCE *Short Answer* How many canine teeth do humans typically have in early adulthood?

ANSWER: 4

TOSS-UP

6) PHYSICAL SCIENCE *Multiple Choice* Which of the following atomic properties most directly determines that elements in the same group of the Periodic Table have similar chemical properties:

- W) number of protons
- X) number of valence electrons
- Y) charge of protons
- Z) stability of neutrons

ANSWER: X) NUMBER OF VALENCE ELECTRONS

BONUS

6) PHYSICAL SCIENCE *Short Answer* What is the atomic mass rounded to the nearest whole number and the net charge of an ion with 7 protons, 6 neutrons, and 8 electrons?

ANSWER: ATOMIC MASS = 13; NET CHARGE = -1

TOSS-UP

7) EARTH SCIENCE *Multiple Choice* Which of the following is believed to be the process that causes Earth's tectonic plates to move:

- W) convection currents in the crust
- X) convection currents in the mantle
- Y) gravitational influence of the Sun and Moon directly on continental plates
- Z) volcanic activity along subduction zones

ANSWER: X) CONVECTION CURRENTS IN THE MANTLE

BONUS

7) EARTH SCIENCE *Multiple Choice* In which of the following locations would you typically expect the average salinity of surface sea water to be the LOWEST:

- W) in the Dead Sea
- X) in the waters off Antarctica
- Y) in the Chesapeake Bay
- Z) at the mouth of the Mississippi River

ANSWER: Z) AT THE MOUTH OF THE MISSISSIPPI RIVER

TOSS-UP

8) MATH *Multiple Choice* Which of the following is NOT true:

- W) $23 - 3 \times 2 = 17$
- X) $72 \div 9 - 3 = 5$
- Y) $0.3 + 0.4 \times 2 = 1.4$
- Z) $6 + 6 \times 2 = 18$

ANSWER: Y) $0.3 + 0.4 \times 2 = 1.4$

BONUS

8) MATH *Short Answer* If on average 6 people drink two-thirds of a gallon of lemonade, how many people will drink 4 gallons?

ANSWER: 36

TOSS-UP

9) GENERAL SCIENCE *Short Answer* What molecular substance is typically considered the most critical for life to exist on another planet?

ANSWER: WATER

BONUS

9) GENERAL SCIENCE *Short Answer* Name all of the following 4 organisms that are typically filter feeders in an aquatic environment: barnacles; corals; frogs; kelp

ANSWER: BARNACLES; CORALS

TOSS-UP

10) LIFE SCIENCE *Short Answer* If the 4 main classes of biological molecules are protein, lipid, carbohydrate, and nucleic acid, which would butter be classified as?

ANSWER: LIPID

BONUS

10) PHYSICAL SCIENCE *Short Answer* Cellulose is a polymer of what 6-carbon sugar?

ANSWER: GLUCOSE

TOSS-UP

11) PHYSICAL SCIENCE *Short Answer* Order the following 3 liquids from the one with the LOWEST viscosity to the one with the HIGHEST viscosity at room temperature: pure olive oil; water; pure honey

ANSWER: WATER; PURE OLIVE OIL; PURE HONEY

BONUS

11) PHYSICAL SCIENCE *Short Answer* Name all of the following 4 choices that are compounds: water; antimony; carbon dioxide; mercury

ANSWER: WATER AND CARBON DIOXIDE

TOSS-UP

12) EARTH SCIENCE *Multiple Choice* Rocks that are produced when magma cools and solidifies deep below the Earth's crust are called:

- W) extrusive igneous
- X) intrusive igneous
- Y) extrusive metamorphic
- Z) intrusive sedimentary

ANSWER: X) INTRUSIVE IGNEOUS

BONUS

12) EARTH SCIENCE *Short Answer* Of the following 5 choices, name 2 that are igneous rocks: rock salt; granite; basalt; sandstone; gypsum

ANSWER: GRANITE AND BASALT

TOSS-UP

13) MATH *Short Answer* Change the following mixed number into an improper fraction: $3\frac{5}{18}$

ANSWER: $\frac{59}{18}$

BONUS

13) MATH *Short Answer* Evaluate the following expression: $-6 \times 3 + -16 \div 4$

ANSWER: -22

TOSS-UP

14) GENERAL SCIENCE *Short Answer* Convert the following value into standard scientific notation: 0.00634×10^8

ANSWER: 6.34×10^5

BONUS

14) GENERAL SCIENCE *Short Answer* Multiply the following 2 values, giving your answer in the correct number of significant figures: 10.1×1.201

ANSWER: 12.1

TOSS-UP

15) LIFE SCIENCE *Short Answer* Geotropism is a response of plants to what external force?

ANSWER: GRAVITY

BONUS

15) LIFE SCIENCE *Short Answer* Flowering plants are grouped into what 2 classes named after their number of seed leaves?

ANSWER: MONOCOTS AND DICOTS (ACCEPT: MONOCOTYLEDONS AND DICOTYLEDONS)

TOSS-UP

16) PHYSICAL SCIENCE *Multiple Choice* Which of the following is the scientific term for a drink that settles and needs to be shaken to redistribute the particles throughout the drink:

- W) homogenous
- X) solvent
- Y) suspension
- Z) colloid

ANSWER: Y) SUSPENSION

BONUS

16) PHYSICAL SCIENCE *Short Answer* What is the ideal mechanical advantage of a single fixed pulley?

ANSWER: 1

TOSS-UP

17) EARTH SCIENCE *Short Answer* The lithosphere is made up of the uppermost mantle and what other layer?

ANSWER: CRUST (ACCEPT: CONTINENTAL AND/OR OCEANIC CRUST)

BONUS

17) EARTH SCIENCE *Multiple Choice* Volcanoes and earthquakes occur primarily in which of the following locations:

- W) along plate boundaries
- X) along continental shelves
- Y) at the North and South Poles
- Z) around the Hawaiian Islands

ANSWER: W) ALONG PLATE BOUNDARIES

TOSS-UP

18) MATH *Multiple Choice* Which of the following is NOT true:

- W) two numbers are reciprocals if their product is 1
- X) one-half of three quarters is three eighths
- Y) a whole number is divisible by 5 if the 'ones' digit is 0 or 5
- Z) an example of a proper fraction is $\frac{6}{4}$

ANSWER: Z) AN EXAMPLE OF A PROPER FRACTION IS $\frac{6}{4}$

BONUS

18) MATH *Short Answer* What is the sum of all odd one-digit prime positive numbers?

ANSWER: 15

TOSS-UP

19) GENERAL SCIENCE *Multiple Choice* Which of the following are sometimes called “big dirty snowballs” because of their composition:

- W) comets
- X) asteroids
- Y) meteorites
- Z) dwarf planets

ANSWER: W) COMETS

BONUS

19) GENERAL SCIENCE *Multiple Choice* Which of the following is NOT true about comets:

- W) to Earth-bound observers, comets glow because they are nearing Earth’s atmosphere
- X) they typically have elliptical orbits
- Y) the Deep Impact probe recently struck a comet
- Z) the solid part of a comet is called the nucleus

ANSWER: W) TO EARTH-BOUND OBSERVERS, COMETS GLOW BECAUSE THEY ARE NEARING EARTH’S ATMOSPHERE

TOSS-UP

20) LIFE SCIENCE *Multiple Choice* Which of the following is the location of the biceps humeris muscle:

- W) chest
- X) leg
- Y) abdomen
- Z) arm

ANSWER: Z) ARM

BONUS

20) LIFE SCIENCE *Short Answer* What general type of human blood vessel returns blood to the heart?

ANSWER: VEIN

TOSS-UP

21) PHYSICAL SCIENCE *Short Answer* How many protons does the heaviest isotope of hydrogen have?

ANSWER: 1

BONUS

21) PHYSICAL SCIENCE *Short Answer* Distillation depends mostly upon what physical property?

ANSWER: BOILING POINT (ACCEPT: CONDENSATION POINT)

TOSS-UP

22) EARTH SCIENCE *Multiple Choice* Chalk is a type of:

- W) limestone
- X) coal
- Y) rock salt
- Z) basalt

ANSWER: W) LIMESTONE

BONUS

22) EARTH SCIENCE *Short Answer* On which of the terrestrial planets does the Sun rise in the west?

ANSWER: VENUS

TOSS-UP

23) MATH *Short Answer* How many U.S. quarters equal 750 U.S. nickels?

ANSWER: 150

BONUS

23) MATH *Short Answer* Name all of the following 5 numbers that are composite numbers:
3, 11, 33, 53, 63

ANSWER: 33; 63

TOSS-UP

24) GENERAL SCIENCE *Short Answer* Convert 100 milliliters into cubic centimeters:

ANSWER: 100

BONUS

24) GENERAL SCIENCE *Short Answer* At standard temperature and pressure, how many grams, rounded to the nearest whole number, does the contents in a 12 ounce or 355 milliliter water bottle weigh?

ANSWER: 355

TOSS-UP

25) LIFE SCIENCE *Short Answer* What is the most common name for the polymers of DNA and associated proteins that are found in the eukaryotic nucleus?

ANSWER: CHROMOSOME

BONUS

25) LIFE SCIENCE *Multiple Choice* Which of the following characteristics is MOST typical of bacteria:

- W) numerous mitochondria
- X) no nucleus
- Y) numerous cilia
- Z) reproduction by budding

ANSWER: X) NO NUCLEUS