

OSSAA 2022-2023

DISTRICT GAME 1 FIRST QUARTER TOSS UP QUESTIONS

- | | Team One | Team Two |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| 1. Math Computation: In the student elections, eight people are up for the positions of president, vice president, and reporter. How many different combinations of student councils are possible? | _____ | _____ |
| Answer: 336 | | |
| 2. In religious mythology, this female demon is often portrayed as the first wife of Adam. Which woman first appears in the Alphabet of Ben Sira in the 8th century CE? | _____ | _____ |
| Answer: Lilith | | |
| 3. This cell process occurs when the cell membrane forms a pouch around an exterior substance, which closes off into a vesicle, and then enters the interior of the cell. What is this process that allows a cell to bring across a molecule too large to pass through the cell membrane? | _____ | _____ |
| Answer: Endocytosis | | |
| 4. This New York publisher was tried for libel in 1733 for printing articles exposing the corruption of the colony's governor. Which man's trial was an important step toward the establishment of a free press in America? | _____ | _____ |
| Answer: John Peter Zenger | | |
| 5. This board game ends in a loss when no disease cubes of any one color are left, the eighth outbreak occurs, or there aren't enough cards left in the draw. In which cooperative game do the players attempt to find cures for all four diseases using characters like the Dispatcher, Medic, or Scientist? | _____ | _____ |
| Answer: Pandemic | | |
| 6. This artist's <i>Sunflower</i> series was painted after he moved to France from the Netherlands. Which artist lived in the Yellow House in Arles, which became one of his subjects? | _____ | _____ |
| Answer: Vincent Van Gogh | | |

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Team One Team Two

7. **Math Computation:** Forrest can paint a wall in 4 hours, while Jenny can paint the same wall in 6 hours. At those same rates, how long in hours would it take them to paint the wall together?

Answer: **12/5 (or 2&2/5 or 2.4)**

8. This theater is the national theater of Ireland. Which theater in Dublin grew out of the Irish Literary Theatre established by William Butler Yeats and Lady Gregory in 1899?

Answer: **Abbey Theater**

9. This bone is the only one in the human body which does not connect to any other bone. Name this U-shaped bone that serves as the base for the tongue, located about one inch above the larynx.

Answer: **Hyoid**

10. This pharaoh of Ancient Egypt became queen of Egypt when she was just 12 years old. Which female pharaoh, the 6th pharaoh of the 18th dynasty, wore masculine clothing to represent the sun god Ra?

Answer: **Hatshepsut**

11. This actor was nominated for 21 Emmys as Hawkeye Pierce in the TV show *M*A*S*H*. Which actor also portrayed U.S. Senator Arnold Vinick on *The West Wing*?

Answer: **Alan Alda**

12. Works by this composer include an unfinished requiem and 41 symphonies. Which Austrian composer's last symphony is known as the Jupiter symphony?

Answer: **Wolfgang Amadeus Mozart**

13. **Math Computation:** A \$1000 savings accounts earns 3% interest. How much will be in the account after 2 years if the interest is compounded annually?

Answer: **\$1060.90**

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DISTRICT GAME 1 FIRST QUARTER TOSS UP QUESTIONS

Team One Team Two

14. In Norse mythology, this character is the father of the Midgard serpent and Hel, the goddess of Death. Which character is known as a trickster god?

Answer: Loki

_____ _____

15. This man is considered the father of electric shavers. Name this American inventor who patented the first electric shaver and whose name is still synonymous with shaving.

Answer: Jacob Schick

_____ _____

16. The 38th parallel, which forms the border between North and South Korea, was officially designated as this type of area after the Korean War. Which type of area is abbreviated DMZ?

Answer: Demilitarized Zone

_____ _____

17. In 2022, teams from this country were expelled from the International Olympic Committee, the World Cup, and the EUFA [yoo-ay-fah] championships. Name this country which invaded Ukraine.

Answer: Russia

_____ _____

18. Most of the marble used by the Italian Renaissance sculptors was mined in this Italian city. Which city has a museum dedicated to the marble for which it is best known?

Answer: Carrara

_____ _____

19. **Math Computation:** On what intervals is the function:
 $f(x) = x^3 - 12x^2 + 8x + 13$ [F of x equals x cubed minus 12 x squared plus 8x plus 13] concave up? Express your answer in the form: $x > a$ [x is greater than a].

Answer: $x > 4$ [x is greater than 4]

_____ _____

20. This literary character's given name is Oscar Zoroaster Phadrig Isaac Norman Henkle Emmanuel Ambroise Diggs. By what other name, the title of a famous book, is this character known?

Answer: The Wizard of Oz

_____ _____

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DISTRICT GAME 1 SECOND QUARTER 60 SECOND QUESTIONS

MYTHOLOGY - ROMAN GODS AND GODDESSES

Directions: Given a brief description, identify the following gods and goddesses from Roman mythology.

- | | | |
|-----|------------------------------------|----------------|
| 1. | Goddess of wisdom | Minerva |
| 2. | Goddess of marriage and childbirth | Juno |
| 3. | God of sun and light | Apollo |
| 4. | Goddess of the hunt | Diana |
| 5. | God of fire and blacksmithing | Vulcan |
| 6. | God of War | Mars |
| 7. | Goddess of hearth and home | Vesta |
| 8. | Goddess of agriculture and harvest | Ceres |
| 9. | God of messengers and thieves | Mercury |
| 10. | God of the waters | Neptune |

EXTRA:

- | | | |
|----|-----------------------------|----------------|
| 1. | God of wine and merrymaking | Bacchus |
| 2. | God of sleep | Somnus |

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DISTRICT GAME 1 SECOND QUARTER 60 SECOND QUESTIONS

VOCABULARY - 7-LETTER WORDS THAT BEGIN AND END WITH THE SAME LETTER

Directions: Given a brief definition, identify these words that begin and end with the same letter.

- | | | |
|-----|-----------------------------------|----------------|
| 1. | A- A type of hay | Alfalfa |
| 2. | B- A good place to soak | Bathtub |
| 3. | C- A jar used in mummification | Canopic |
| 4. | D- Comic strip husband of Blondie | Dagwood |
| 5. | E- It can be solar or lunar | Eclipse |
| 6. | F- A head-to-head competition | Faceoff |
| 7. | G- A young goose | Gosling |
| 8. | M- Non-presidential year election | Midterm |
| 9. | K- Family | Kinfolk |
| 10. | L- A type of pass in football | Lateral |

EXTRA:

- | | | |
|----|-------------------------------------------------|----------------|
| 1. | N- Subatomic particle with no electric charge | Neutron |
| 2. | H- Measurement that goes with width and breadth | Height |

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DISTRICT GAME 1 SECOND QUARTER 60 SECOND QUESTIONS

SCIENCE - ANATOMY PREFIXES

Directions: Given a medical prefix, name the part of the body to which it refers.

1.	Pedi-	Foot
2.	Oro-	Mouth
3.	Derma-	Skin
4.	Manu-	Hand
5.	Oto-	Ear
6.	Cephalo-	Head
7.	Dorso-	Back
8.	Articulo-	Joint
9.	Brachio-	Upper arm
10.	Lapar-	Abdomen

EXTRA:

1.	Phelbo-	Vein
2.	Auri-	Ear

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**DISTRICT GAME 1
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

21. **Science computation:** What is the magnification of a lens that produces an image 240 centimeters from the lens if the original object is 60 centimeters from the lens?

Answer: 4

22. In 1875, Judge Isaac Parker appointed this former slave as a deputy marshal for Indian Territory. Which legendary lawman was featured in the movie *Hell on the Border*?

Answer: Bass Reeves

23. This man is known as the “Quad King” because of his quadruple jumps in figure skating. Which American figure skater won the gold medal in figure skating at the 2022 Beijing Olympic Games?

Answer: Nathan Chen

24. Mehmet Oz's viral campaign video, shot inside a grocery store, has garnered much criticism over his use of this culinary term. Which term, beginning with C, did he use as the purpose of the fresh vegetables he was purchasing?

Answer: Crudit  (s)

25. **Math Computation:** What is the maximum value of the parabola with the following equation: $y = -8(x + 4)^2 + 14$ [y equals negative 8 times the quantity x plus 4 end quantity squared plus 14].

Answer: 14

26. In this epic poem, a man on a 10-year journey to reach home ends up spending seven of those years on an island with the daughter of a god. Which poem ends with the hero's return home just in time to rescue his wife from persistent suitors?

Answer: The Odyssey

27. What molecular shape is exhibited by CF₄, where the four fluorine atoms are evenly distributed in the space around the central carbon atom?

Answer: Tetrahedral

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DISTRICT GAME 1 THIRD QUARTER TOSS UP QUESTIONS

Team One Team Two

28. When all parties to a transaction are treated fairly, this quality has been achieved. What is this six-letter term which begins with E?

Answer: Equity

29. When three Republicans voted across party lines, this woman was confirmed as the first Black woman to serve on the Supreme Court. Which woman was sworn in when Stephen Breyer retired at the end of the court's 2022 term?

Answer: Ketanji Brown Jackson

30. The largest landslide in Earth's recorded history occurred in 1980 when this event in Washington State took place. Which event triggered the landslide that traveled over 14 miles at speeds of 70 to 150 miles per hour?

Answer: Eruption of Mount St. Helens

31. **Math Computation:** In slope-intercept form, what is the equation of the line with a slope of negative 4 through the point (17, 24) [17 comma 24]?

Answer: $y = -4x + 92$

32. *Rikki Tikki Tavi* is just one of the short stories included in this collection by British author Rudyard Kipling. Which collection includes stories about a man-cub and his animal friends?

Answer: The Jungle Book

33. In the 1600s, this man solved the problem of why the planets moved according to Kepler's Laws. Which man published his theories in the book, *Philosophiae Naturalis Principia Mathematica*, in which he stated his laws of motion?

Answer: Isaac Newton

34. This Massachusetts newspaper publisher burned a copy of the US Constitution in 1854 because it failed to outlaw slavery in the Bill of Rights or any existing amendments. Which abolitionist published *The Liberator*?

Answer: William Lloyd Garrison

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DISTRICT GAME 1 THIRD QUARTER TOSS UP QUESTIONS

Team One Team Two

35. At the 2022 Oscars, this film won for Best Cinematography, Best Film Editing, Best Original Score, Best Production Design, Best Visual Effects, and Best Sound. Which film stars Timothee Chalamet as Paul Atreides and Rebecca Ferguson as Lady Jessica?

Answer: *Dune*

36. This American artist's paintings often emphasized the crowds and isolation of New York City, and he used his wife as a model for women in city settings. Which artist's paintings include *Automat* and *Chop Suey*?

Answer: Edward Hopper

37. **Math Computation:** What is the surface area of a square pyramid that has base lengths of 8 feet and slant heights of 10 feet? Put your answer in square feet.

Answer: 224

38. Harold Pinter, Kingsley Amis, and John Osborne were all members of this 20th century literary group. What three-word designation was given to this group of British playwrights and authors who were disillusioned with traditional British society?

Answer: Angry Young Men

39. In April 2022 it was announced by paleontologists that fossils of these reptiles had been found high in the Swiss Alps. For which giant extinct marine reptiles did they find a rib, a tooth, and vertebrae?

Answer: Ichthyosaur

40. In 1979, the last person to hold the title of Shah was forced into exile from this country. In which country did an Islamic Revolution bring Ayatollah Khomeini to power?

Answer: Iran

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DISTRICT GAME 1 FOURTH QUARTER 60 SECOND QUESTIONS

MATH - CALCULATING SIMPLE INTEREST

Directions: Given the principal, interest rate, and number of years, find the simple interest accrued for each of the following,. You do not need to say dollars.

1.	\$200 at 4% for 4 years	(\$32)
2.	\$600 at 3% for 5 years	90
3.	\$400 at 3% for 6 years	72
4.	\$800 at 8% for 2 years	128
5.	\$240 at 4% for 5 years	48
6.	\$1500 at 3% for 2 years	90
7.	\$650 at 7% for 5 years	227.50
8.	\$2000 at 4.5% for 4 years	360
9.	\$1800 at 2.5% for 5 years	225
10.	\$3000 at 6.5% for 6 years	1170

EXTRA:

1.	\$1100 at 7% for 3 years	231
2.	\$100 at 4.25% for 6 years	25.50

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DISTRICT GAME 1 FOURTH QUARTER 60 SECOND QUESTIONS

WORLD HISTORY - FAMOUS RULERS

Directions: Given the name of a famous ruler, name the empire, country, or ethnic group over which he or she ruled.

- | | | |
|-----|---------------------|------------------------------------------------------|
| 1. | Alexander the Great | Macedonia |
| 2. | Idi Amin | Uganda |
| 3. | Otto von Bismarck | Germany (accept Prussia) |
| 4. | Charlemagne | Holy Roman Empire (accept Franks or Lombards) |
| 5. | Jawaharlal Nehru | India |
| 6. | Catherine the Great | Russia |
| 7. | Hadrian | Roman Empire |
| 8. | Haile Selassie | Ethiopia |
| 9. | Justinian I | Byzantine Empire |
| 10. | Philip II | Spain |

EXTRA:

- | | | |
|----|----------|--------------------------------------|
| 1. | Meiji | Japan |
| 2. | Victoria | United Kingdom (accept India) |

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**DISTRICT GAME 1
FOURTH QUARTER
60 SECOND QUESTIONS**

LITERATURE - FAMOUS AMERICAN SHORT STORIES

Directions: Given the title of a famous short story by an American author, name the author.

- | | |
|----------------------------------------------------|-------------------------------------------|
| 1. To Build a Fire | Jack <u>London</u> |
| 2. Rip Van Winkle | Washington <u>Irving</u> |
| 3. Hills Like White Elephants | Ernest <u>Hemingway</u> |
| 4. The Turn of the Screw | Henry <u>James</u> |
| 5. The Celebrated Jumping Frog of Calaveras County | Mark <u>Twain</u> (Samuel Clemens) |
| 6. The Cask of Amontillado | Edgar Allan <u>Poe</u> |
| 7. The Outcasts of Poker Flat | Bret <u>Harte</u> |
| 8. The Most Dangerous Game | Richard <u>Connell</u> |
| 9. The Story of an Hour | Kate <u>Chopin</u> |
| 10. A Perfect Day for Bananafish | J.D. <u>Salinger</u> |

EXTRA:

- | | |
|-------------------------|-----------------------------------|
| 1. The Gift of the Magi | O. <u>Henry</u> |
| 2. Young Goodman Brown | Nathaniel <u>Hawthorne</u> |

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DISTRICT GAME 1 EXTRA QUESTIONS

Extra:

- E1. The positive type of this plant growth occurs when roots move downward, and the negative type occurs when stems move upward towards the surface. What is the name for plant growth in response to gravity?

Answer: Geotropism

Team One Team Two

- E2. This set of 21 dances by Johannes Brahms was originally intended for two pianists playing on a single piano. What was the title of this collection based on the folk music of the Roma culture associated with a specific European nation?

Answer: Hungarian Dances

- E3. **Math Computation:** Factor the following binomial as much as possible:
 $x^3 - 27$ [x cubed minus 27]

Answer: $(x - 3)(x^2 + 3x + 9)$

- E4. If a poem has a plot, characters, and a setting, it is generally classified as this type of poem. Which type of poetry tells a story?

Answer: Narrative

- E5. This swimmer won seven gold medals, all in world record time, at the 1972 Summer Olympics. Which American swimmer set 35 world records between 1968 and 1972, culminating in his dominance of swimming events at the Munich Olympics?

Answer: Mark Spitz

- E6. The capital of this German state is Munich. Which state in Germany is home to Neuschwanstein Castle, built for King Louis II in 1869?

Answer: Bavaria

- E7. **Math Computation:** Condense the following logarithmic expression into a single logarithmic term: $\log 12 + 2\log 4 - \log 6$ [$\log 12$ plus $2 \log 4$ minus $\log 6$].

Answer: $\log 32$

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**DISTRICT GAME 1
EXTRA QUESTIONS**

- | | Team One | Team Two |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| E8. The name of this Catholic cathedral is translated as "Our Lady of Paris." Which cathedral sits on an island in the Seine River and is known for its flying buttresses and rose windows? | _____ | _____ |
| Answer: <u>Notre Dame de Paris</u> | _____ | _____ |
| E9. These nerves run from receptors in the nasal mucosa and synapse to the brain. What are these nerves that carry impulses for our sense of smell? | _____ | _____ |
| Answer: <u>Olfactory</u> | _____ | _____ |
| E10. In an essay, the quality of logical progression is known by this term. Which word beginning with C, refers to the way a piece hangs together to make logical sense? | _____ | _____ |
| Answer: <u>Coherence</u> | _____ | _____ |

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DISTRICT GAME 2 FIRST QUARTER TOSS UP QUESTIONS

Team One Team Two

1. This man is the only Oklahoman to have served as the U.S. Speaker of the House, doing so from 1971 to 1976. Which politician and Rhodes scholar went to high school in McAlester and graduated from OU?

Answer: Carl Albert

2. In this California city, teachers and support staff went on strike in March of 2022 to protest a “severe staffing crisis” and cuts to health benefits. In which central California city can you visit the California State Capitol Museum?

Answer: Sacramento

3. A filbert is more commonly known as this type of nut. Which nut is often paired with chocolate in spreads and cake fillings?

Answer: Hazelnut

4. **Chemistry computation:** What is the empirical formula of glucose?

Answer: CH₂O [C H 2 O]

5. This treaty settled the boundary dispute between New Brunswick and the United States. Which treaty also dealt with navigation on open waters and the use of U.S. warships off the coast of Africa to restrict the slave trade?

Answer: Webster-Ashburton Treaty

6. This player was drafted by the Green Bay Packers in the second round of the 2014 NFL Draft. Which wide receiver refused the franchise tag for the Packers and was dealt to the Las Vegas Raiders?

Answer: Davante Adams

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DISTRICT GAME 2 FIRST QUARTER TOSS UP QUESTIONS

Team One Team Two

7. Informally, this part of a letter is called the greeting. What is the formal name for the greeting in a letter?

Answer: Salutation

8. **Math Computation:** Solve the following equation to find H:
 $13H - 52 = -169$ [13H minus 52 equals negative 169].

Answer: (H=) -9

9. During the first season of Sesame Street, this character was bright orange. Which character turned green after a vacation to Swamp Mushy Muddy?

Answer: Oscar the Grouch

10. This later evolution of the hominin line existed between 230,000 and 30,000 years ago and was mostly prevalent in the colder climates of Europe. Which species of the Homo genus, shorter and more muscular than modern humans, used sophisticated tools of bone or antler and produced cave paintings?

Answer: Homo Neanderthalensis (Neanderthals)

11. The Old Gringo, a novel by Carlos Fuentes, is believed to be a novel about this 19th century author who disappeared in Mexico in 1913. Which journalist and short story writer's works include *The Devil's Dictionary* and *An Occurrence at Owl Creek Bridge*?

Answer: Ambrose Bierce

12. In May 2022, a leak of an initial draft opinion by this Supreme Court justice was released by POLITICO. Which justice wrote the draft majority opinion overturning the Roe v. Wade decision from 1973?

Answer: Samuel Alito

13. Three months after the attack on Fort Sumter, this battle became the first major battle of the Civil War. Which battle ended with the "Great Skedaddle" of picnicking observers who had expected an easy victory?

Answer: First Battle of Bull Run

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DISTRICT GAME 2 FIRST QUARTER TOSS UP QUESTIONS

Team One Team Two

14. **Math Computation:** What is the partial sum of the arithmetic sequence that includes all the numbers from one to 80?

Answer: **3240**

15. This artist's *Symphony in White, No. 1*, was rejected from the Paris Salon in 1863. Which artist made a bigger splash with his *Arrangement in Gray and Black, No. 1*?

Answer: **James Whistler**

16. These disk-shaped structures are embedded in the stroma of the chloroplast. What is the name for these membrane-bound compartments usually found in stacks, like a roll of coins, where photosynthesis begins?

Answer: **Thylakoid(s)**

17. The title of this play by Lillian Hellman is taken from the Old Testament *Song of Solomon*. Which play is set on a plantation in the South in 1900?

Answer: **The Little Foxes**

18. This organization's motto is "To make the best better". What is this youth organization whose members pledge their head to clearer thinking and their heart to greater loyalty?

Answer: **4-H**

19. This man, known as the Red Baron, is credited with shooting down 80 enemy aircraft during World War I, making him the top overall ace of the war. Which German fighter pilot flew a red Fokker triplane?

Answer: **Manfred von Richthofen**

20. **Math Computation:** A transversal cuts across two parallel lines. If the measures of two alternate exterior angles are $(5x - 13)$ and $(3x + 41)$ degrees, what are the measures of the two angles in degrees?

Answer: **122**

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DISTRICT GAME 2 SECOND QUARTER 60 SECOND QUESTIONS

SCIENCE - SI UNITS

Directions: Identify the SI units for each of the following quantities.

1.	Length	Meter
2.	Resistance	Ohm
3.	Capacitance	Farad
4.	Power	Watt
5.	Electric charge	Coulomb
6.	Time	Second
7.	Plane angle	Radian
8.	Magnetic flux	Weber
9.	Radioactivity	Becquerel
10.	Illuminance	Lux

EXTRA:

1.	Stress	Pascal
2.	Equivalent dose of ionizing energy	Sievert

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**DISTRICT GAME 2
SECOND QUARTER
60 SECOND QUESTIONS**

MATH - MIDPOINTS OF SEGMENTS

Directions: Find the midpoint of a segment with the two given endpoints. {Moderator – read (1, 2) as one comma 2.}

- | | | |
|-----|--------------------------|--------------------|
| 1. | (9, 13) and (17, 25) | (13, 19) |
| 2. | (15, 24) and (7, 18) | (11, 21) |
| 3. | (-5, 14) and (19, 26) | (7, 20) |
| 4. | (-11, 4) and (13, -26) | (1, -11) |
| 5. | (31, -13) and (-17, 33) | (7, 10) |
| 6. | (-9, 53) and (-27, 15) | (-18, 34) |
| 7. | (-24, -5) and (-38, 41) | (-31, 18) |
| 8. | (29, 35) and (-46, 23) | (-8.5, 29) |
| 9. | (-17, -12) and (43, -53) | (13, -32.5) |
| 10. | (57, -71) and (-39, 48) | (9, -11.5) |

EXTRA:

- | | | |
|----|-------------------------|---------------------|
| 1. | (27, 35) and (56, -12) | (41.5, 11.5) |
| 2. | (134, 64) and (68, -28) | (101, 18) |

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DISTRICT GAME 2 SECOND QUARTER 60 SECOND QUESTIONS

MUSIC - MUSICIANS AND THEIR INSTRUMENTS

Directions: Given the name of a musician known for master of a specific instrument, name the musical instrument.

- | | | |
|-----|--------------------|-----------|
| 1. | Elton John | Piano |
| 2. | Charlie Daniels | Fiddle |
| 3. | Louis Armstrong | Trumpet |
| 4. | John Coltrane | Saxophone |
| 5. | Bill Monroe | Mandolin |
| 6. | Yehudi Menuhin | Violin |
| 7. | Sergei Rachmaninov | Piano |
| 8. | Johann Pachelbel | Organ |
| 9. | Bobbi Humphrey | Flute |
| 10. | Steve Martin | Banjo |

EXTRA:

- | | | |
|----|--------------|-------------------|
| 1. | Eric Clapton | (Electric) Guitar |
| 2. | Dave Grohl | Drums |

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DISTRICT GAME 2 THIRD QUARTER TOSS UP QUESTIONS

Team One Team Two

21. This jazz musician's albums include *A Love Supreme* and *Giant Steps*. Which jazz saxophonist had hits with the songs *My Favorite Things* and *In a Sentimental Mood*?

Answer: John Coltrane

22. **Science computation:** Convert 91 degrees, 36 minutes into a degree decimal equivalent.

Answer: 91.6

23. This woman was the first Black poet to win a Pulitzer Prize. Which woman's poems include *The Mother*, *The Bean Eaters*, and *We Real Cool*?

Answer: Gwendolen Brooks

24. This singer, songwriter, and philanthropist was inducted into the Rock & Roll Hall of Fame in 2022. Which Tennessee superstar has her own theme park and dinner theaters?

Answer: Dolly Parton

25. This sculptor's crowning achievement, although he died before finishing it, is Mount Rushmore. Which sculptor also began the carving on Stone Mountain in Georgia?

Answer: Gutzon Borglum

26. **Math Computation:** Subtract matrix B from matrix A: Matrix A has elements 22 and negative 16 top row left to right, and elements negative 17 and 19 bottom row left to right. Matrix B has elements 19 and negative 32 top row left to right and elements 25 and negative 16 bottom row left to right.

Answer: 3 and 16 top row left to right, negative 42 and 35 bottom row left to right

27. This Greek hero used a ball of thread during one of his heroic adventures. Which hero was helped by Ariadne when he slew the Minotaur and escaped the labyrinth?

Answer: Theseus

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**DISTRICT GAME 2
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

28. **Science Computation:** Convert 1.78 hectograms into grams.

Answer: 178 grams

29. This California city was the birthplace of the hippie movement and the "Summer of Love." Which city is home to the Haight-Ashbury district and the largest Chinatown outside of Asia?

Answer: San Francisco

30. This man made a video address to the Russian people the day before the invasion saying "They told you that Ukraine is posing a threat to Russia. It was not the case in the past, not in the present, it's not going to be in the future." Name this president of Ukraine since 2019.

Answer: Volodymyr Zelenskyy

31. This Oklahoma state park is home to one of the world's largest gypsum caves. Which state park can be seen in Woodward County?

Answer: Alabaster Caverns

32. **Math Computation:** Audie has scored 76, 81, 83, and 69 on her tests so far in her biology class. If she wants to end up with an 80.0 average, what does she need to score on her last test?

Answer: 91

33. This type of pasta is nicknamed for its signature bowtie shape. What is the actual name of this pasta formed by pinching rectangular pieces of dough into a bowtie shape?

Answer: Farfalle

34. The corpus luteum [lu'te-um] structure of the ovary produces both estrogen and this hormone. Which steroid hormone works with estrogen to trigger the menstrual cycle and relax the muscles of the uterus when an embryo is implanted so that it won't be rejected by the body?

Answer: Progesterone

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DISTRICT GAME 2 THIRD QUARTER TOSS UP QUESTIONS

Team One Team Two

35. In a story, this type of character does not undergo inner changes, remaining exactly the same through the story. Which type of character is exemplified by Draco in the *Harry Potter* series or Mr. Collins in *Pride and Prejudice*?

Answer: Static characters

36. Four times this cyclist completed a Grand Tour double, winning two of the three of the Tours of France, Italy, and Spain. Which Belgian cyclist, the only person to have won each of the “Monuments” races at least twice, is considered to be the greatest bicyclist of all time?

Answer: Eddy Merckx [Merx]

37. The Bureau of Indian Affairs is a part of this U.S. executive department. As of September 1, 2022, which department is headed by Deb Haaland, the first Native American to serve as a cabinet secretary?

Answer: Interior

38. **Math Computation:** Convert into a base 2 number, the base ten number 68.

Answer: 1000100 [one zero zero zero one zero zero]

39. The color aubergine is named for this hanging vegetable, the plants of which can grow several feet high. Which vegetable's most recognizable variety is purple in color?

Answer: Eggplant

40. **Science computation:** Find the potential difference when a charged particle moves 0.25 meters in a uniform electric field of strength 180 newtons per coulomb. Put your answer in volts with the correct number of significant digits.

Answer: 45

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DISTRICT GAME 2 FOURTH QUARTER 60 SECOND QUESTIONS

PHYSICS COMPUTATION - TEETER-TOTTER TORQUE

Directions: Two weights are sitting on a teeter-totter at equilibrium and there is no net torque on the system. You will be given the mass and distance that the first object is away from the fulcrum, and either the mass or distance of the second object. Use the fact that torque equals force times distance to find the missing measurements, all of which will be whole numbers. Make sure to state the correct units also, but don't worry about significant digits.

- | | | |
|-----|-----------------------------------------------------------------------------|---------------------|
| 1. | Object one, 30 kilograms at 5 meters, object two, 15 kilograms and distance | 10 meters |
| 2. | One, 25 kilograms and 8 meters, Two, 40 kilograms and distance | 5 meters |
| 3. | 24 kilograms and 9 meters, 12 kilograms and distance | 18 meters |
| 4. | 32 kilograms and 5 meters, 8 kilograms and distance | 20 meters |
| 5. | 24 kilograms and 15 meters, 20 kilograms and distance | 12 meters |
| 6. | 120 kilograms and 4 meters, 16 meters and mass | 30 kilograms |
| 7. | 45 kilograms and 5 meters, 15 meters and mass | 15 kilograms |
| 8. | 81 kilograms and 6 meters, 18 meters and mass | 27 kilograms |
| 9. | 150 kilograms and 8 meters, 20 meters and mass | 60 kilograms |
| 10. | 25 kilograms and 60 meters, 50 meters and mass | 30 kilograms |

EXTRA:

- | | | |
|----|-------------------------------------------------------|---------------------|
| 1. | 100 kilograms and 6 meters, 25 kilograms and distance | 24 meters |
| 2. | 75 kilograms and 20 meters, 30 meters and mass | 50 kilograms |

OSSAA 2022-2023

DISTRICT GAME 2 FOURTH QUARTER 60 SECOND QUESTIONS

FINE ARTS - ARTISTS AND ART MOVEMENTS

Directions: Given an artist and an artwork, name the specific art movement with which that artist is MOST associated.

- | | | |
|-----|---------------------------------------------------|------------------------|
| 1. | Raphael, <i>The School of Athens</i> | Renaissance |
| 2. | Bronzino, <i>Venus, Cupid, Folly, and Time</i> | Mannerism |
| 3. | Claude Monet, <i>Water Lilies</i> | Impressionism |
| 4. | Antoine Watteau, <i>Embarkation for Cythera</i> | Rococo |
| 5. | Rene Magritte, <i>The Son of Man</i> | Surrealism |
| 6. | Caravaggio, <i>The Calling of St. Matthew</i> | Baroque |
| 7. | Jackson Pollock, <i>Autumn Rhythm (Number 30)</i> | Abstract Expressionism |
| 8. | Jean-Francois Millet, <i>The Gleaners</i> | Realism |
| 9. | Henri Matisse, <i>The Green Stripe</i> | Fauvism |
| 10. | Georges Braque, <i>Violin and Palette</i> | Cubism |

EXTRA:

- | | | |
|----|------------------------------------------|---------|
| 1. | Andy Warhol, <i>Campbell's Soup Cans</i> | Pop Art |
| 2. | Bridget Riley, <i>Blaze</i> | Op Art |

OSSAA 2022-2023

DISTRICT GAME 2 FOURTH QUARTER 60 SECOND QUESTIONS

LANGUAGE ARTS - LITERARY TERMS

Directions: Given a brief definition, identify the following literary terms.

- | | |
|---------------------------------------------------------------------|-----------------|
| 1. Place and time in which a story, play, or novel happens | Setting |
| 2. Humorous imitation of another, usually serious work | Parody |
| 3. Comment in a play heard by the audience but not other characters | Aside |
| 4. Basic unit of measurement in poetic rhythm | Foot |
| 5. Type of drama that is humorous with a happy ending | Comedy |
| 6. A major division in a play | Act |
| 7. Medieval book of animal names and characteristics | Bestiary |
| 8. Informal record of a person's daily life and thoughts | Diary |
| 9. An added conclusion to a book, opposite of prologue | Epilogue |
| 10. Character created as a contrast to another character | Foil |

EXTRA:

- | | |
|---------------------------------------------------------------------|---------------|
| 1. Three-line Japanese poem of 17 syllables | Haiku |
| 2. A written expression of grief or sorrow for the loss of a person | Lament |

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DISTRICT GAME 2 EXTRA QUESTIONS

Extra:

Team One Team Two

- E1. 2022 marks the 55th anniversary of this novel set in Tulsa. Which novel made S.E. Hinton famous?

Answer: The Outsiders

_____ _____

- E2. **Math Computation:** What are the next three terms in the sequence that starts:
3, 5, 11, 21, ...?

Answer: 35, 53, 75

_____ _____

- E3. This man was the winning commander at the Civil War Battle of Mobile Bay. Which Admiral told his crew to "Damn the torpedoes" and proceed ahead at full speed?

Answer: David Farragut

_____ _____

- E4. This actor starred as Captain Benjamin Willard in *Apocalypse Now* and as President Josiah Bartlett in *The West Wing*. Which actor also starred as Robert Hanson in the Netflix series *Grace and Frankie*.

Answer: Martin Sheen (or Ramon Antonio Gerardo Estevez)

_____ _____

- E5. In architecture, this part of the entablature is often decorated with a horizontal band of relief sculpture. What is the name for this feature that could be seen on the Parthenon?

Answer: Frieze

_____ _____

- E6. Solid carbon reacting with oxygen gas forms carbon monoxide gas where the oxygen atom attracts the shared electrons more than the carbon atom. What name is used for a reaction where electrons are gained by one of the atoms?

Answer: Reduction

_____ _____

- E7. This British playwright's works include *Salome*, *A Woman of No Importance*, and *Lady Windermere's fan*. Which 19th century playwright was known for his comedies about British society?

Answer: Oscar Wilde

_____ _____

OSSAA 2022-2023

**DISTRICT GAME 2
EXTRA QUESTIONS**

Team One Team Two

- E8. **Math Computation:** What are the coordinates for the two focal points for an ellipse with equation: $x^2/289 + y^2/225 = 1$ [x squared over 289 plus y squared over 225 equals 1]?

Answer: (8,0) and (-8,0) [must have both; may also say plus or minus 8 comma 0]

- E9. This Phoenician city was conquered by Rome in 146 B.C. Under the terms of the second Punic War, which city was required to seek Rome's permission to wage war, which Rome declared they violated when they attempted to defend their land from annexation?

Answer: Carthage

- E10. During this process of the dark reactions, Rubisco captures carbon dioxide from the air and uses NADPH molecules to release three-carbon sugar molecules. What is the term for the chemical reactions in photosynthesis that convert CO₂ and some hydrogen compounds into glucose through carboxylation, reduction reactions, and RuBP regeneration?

Answer: Calvin cycle

OSSAA 2022-2023

DISTRICT GAME 3 FIRST QUARTER TOSS UP QUESTIONS

Team One Team Two

1. **Math Computation:** How many liters of a 30% salt solution must be added to 20 liters of a 15% salt solution in order to obtain a 20% salt solution? Put your answer in liters.

Answer: 10

2. Parts of this musical instrument include three valves, a slide lock ring, and a water key. Which brass instrument first appeared in a symphony orchestra with the debut of Beethoven's 5th symphony in 1808?

Answer: Trombone

3. This process is often used by gardeners with two cacti and arborists with two types of apple. Which process involves taking a cutting of a small piece of one plant and inserting it into a cutting of another?

Answer: Graft(ing)

4. This poet's collection, *Idylls of the King*, contains a series of linked poems about the legendary King Arthur. Which British poet wrote *The Lady of Shalott*?

Answer: Alfred, Lord Tennyson

5. This sequel was released 36 years after the original film. Name this 2022 movie which broke the record for the largest Memorial Day four-day opening weekend with its depiction of Pete Mitchell returning to teach at the Navy's tactics fighter program.

Answer: *Top Gun: Maverick*

6. This stratovolcano is the second-highest volcano in Antarctica. Which volcano is the southern-most active volcano in the world?

Answer: Mount Erebus

OSSAA 2022-2023

DISTRICT GAME 3 FIRST QUARTER TOSS UP QUESTIONS

Team One Team Two

7. **Math Computation:** What is the integral, from 0 to 1, of:
 $15x^2 - 8x$ [15 x squared – 8x] D X?

Answer: 1

8. These architectural sculptures used as supports first appeared in pairs in three treasuries at Delphi. Which draped female figures were used in classical architecture to take the place of columns as a support?

Answer: Caryatids

9. This condition could be caused by a low RBC count or an abnormal hemoglobin content in the RBC of the blood. What is the term for a decrease in the oxygen-carrying capacity of blood?

Answer: Anemia

10. Demonstrate your spelling skills with this term for words that sound like their meaning. Spell Onomatopoeia.

Answer: o-n-o-m-a-t-o-p-o-e-i-a

11. In 2022, this politician stated: “I say this to my Republican colleagues who defended the indefensible – there will come a day when Donald Trump is gone, but your dishonor will remain.” Which woman was serving as the Republican representative for Wyoming?

Answer: Elizabeth (Liz) Cheney

12. It was rumored that outlaw Cole Younger was the father of this famous female outlaw's daughter. Which infamous outlaw spent much of her time in Indian Territory and was killed near Fort Smith, Arkansas in 1889?

Answer: Belle Starr

13. What name, in geometry, is used for a line that intersects a circle at one point?

Answer: Tangent

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DISTRICT GAME 3 FIRST QUARTER TOSS UP QUESTIONS

Team One Team Two

14. These edible fungi grow underground near tree roots and can sell for thousands of dollars per pound. Which fungi are traditionally searched for with the help of pigs?

Answer: Truffles

15. **Science computation:** Balance the following chemical equation by filling in the blank in the equation: $\underline{\quad}$ CO + 17H₂ → C₈H₁₈ + 8H₂O [blank C O plus 17 H 2 forms C 8 H 18 plus 8 H 2 O] {note these are the letter O not the number zero}.

Answer: 8

16. A kenning is a specific poetic device introduced in poetry of this literary period. Which literary period featured poems such as *The Seafarer* and *Beowulf*?

Answer: Anglo-Saxon

17. This man was named the 2022 NBA Defensive Player of the Year. Name this former first round draft pick out of Oklahoma State.

Answer: Marcus Smart

18. This historic speech was delivered on November 19, 1863. Which speech is engraved on the south wall of the Lincoln Memorial in Washington D.C.?

Answer: Gettysburg Address

19. **Math Computation:** Divide the polynomial, $x^3 - 10x^2 + 25x - 12$ [x cubed minus 10 x squared plus 25x minus 12], by the binomial, x - 3. You could use synthetic division or long division to find this answer.

Answer: $x^2 - 7x + 4$ [x squared minus 7x plus 4]

20. Originally this parchment-like writing material was made from calf skin and used in the finest illuminated manuscripts of medieval times. What is the name for this writing material used by Gutenberg on his 1455 printing of the Bible?

Answer: Vellum

OSSAA 2022-2023

DISTRICT GAME 3 SECOND QUARTER 60 SECOND QUESTIONS

MUSIC - TOP 100 HITS JUNE

Directions: Identify the singer, group, or duo that had each of the following hit songs on the Billboard top 100 list in June 2022.

- | | |
|------------------|-----------------------------------|
| 1. Jimmy Cooks | <u>Drake ft. 21 Savage</u> |
| 2. As It Was | Harry Styles |
| 3. First Class | Jack Harlow |
| 4. Heat Waves | Class Animals |
| 5. Glimpse of Us | Joji |
| 6. Big Energy | Latto |
| 7. Break My Soul | Beyonce |
| 8. Ghose Story | Carrie Underwood |
| 9. 5 Foot 9 | Tyler Hubbard |
| 10. 7500 OBO | Tim McGraw |

EXTRA:

- | | |
|------------------|--------------------|
| 1. Super Gremlin | Kodak Black |
| 2. Provenza | Karol G |

OSSAA 2022-2023

DISTRICT GAME 3 SECOND QUARTER 60 SECOND QUESTIONS

SPORTS - NBA CHAMPIONS

Directions: Given the year and a key member of the team, identify the team that won the National Basketball Association championship that year. {Moderator- unless one part of the name is underlined, they may give either part of the name of the team.}

- | | | |
|-----|-----------------------------|------------------------------|
| 1. | 2021, Giannis Antetokounmpo | Milwaukee Bucks |
| 2. | 2022, Steph Curry | Golden State Warriors |
| 3. | 2019, Kawhi Leonard | Toronto Raptors |
| 4. | 2017, Klay Thompson | Golden State Warriors |
| 5. | 2016, LeBron James | Cleveland Cavaliers |
| 6. | 2013, Dwyane Wade | Miami Heat |
| 7. | 2007, Tim Duncan | San Antonio Spurs |
| 8. | 1983, Julius Erving | Philadelphia 76ers |
| 9. | 1989, Bill Laimbeer | Detroit Pistons |
| 10. | 1981, Robert Parish | Boston Celtics |

EXTRA:

- | | | |
|----|----------------------|----------------------------------|
| 1. | 1991, Scottie Pippen | Chicago Bulls |
| 2. | 2009, Kobe Bryant | Los Angeles <u>Lakers</u> |

OSSAA 2022-2023

DISTRICT GAME 3 SECOND QUARTER 60 SECOND QUESTIONS

ENTERTAINMENT - TV SHOWS OF 1992

Directions: Identify the following television shows, all of which aired during prime time in the 1991-1992 season.

1. NYPD investigates the crime and Manhattan District Attorney's office prosecutes the defendant **Law & Order**
2. Tim "The Tool Man" Taylor has a handyman TV show **Home Improvement**
3. Shoe salesman Al lives with his wife Peggy and two children **Married... with Children**
4. Dorothy, Rose, Blanche, and Sophia live in Miami **The Golden Girls**
5. Jerry, Cosmo, Elaine, and George; yadda-yadda-yadda **Seinfeld**
6. Captain Picard is in charge of the U.S.S. Enterprise **Star Trek: Next Generation**
7. Sam Malone owns a bar in Boston **Cheers**
8. Danny Tanner gets help raising 3 daughters from best buds Joey and Jesse **Full House**
9. Kid from Detroit comes to live with rich uncle in Los Angeles **Fresh Prince of Bel-Air**
10. The drama of high school life in LA with Brandon, Brenda, Kelly, Donna, and Dylan **Beverly Hills, 90210**

EXTRA:

1. Zach, Kelly, and Screech attend Bayside High School **Saved by the Bell**
2. Ex-baseball player works as a housekeeper for New York ad executive and her family **Who's the Boss?**

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DISTRICT GAME 3 THIRD QUARTER TOSS UP QUESTIONS

Team One Team Two

21. This philosopher was one of the first to theorize that the Earth was round after observing the rounded shadow on the Moon during an eclipse. Which early Greek founded the Lyceum and attended Plato's Academy?

Answer: Aristotle

22. Two of the chapters in this famous novel are titled "Knitting" and "Still Knitting." In which novel by Charles Dickens does knitting play a rather gruesome role?

Answer: A Tale of Two Cities

23. This monarch's platinum jubilee kicked off on June 2nd, 2022, honoring her 70 years on the throne. Which queen was being honored by the four days of celebration during the summer of 2022?

Answer: Queen Elizabeth II

24. In 1853, this country was defeated by Mexico at the Battle of Puebla. Cinco de Mayo is a celebration of the defeat of which invading country's force by Mexican troops?

Answer: France

25. In 1975, Bill Gates and Paul Allen designed the BASIC programming language for use in this computer kit. Which machine, created by Ed Roberts and first sold for \$297, was the first to be known as a "personal computer?"

Answer: Altair 8800

26. This painting has the highest insurance value ever recorded for a painting. Which painting by Leonardo da Vinci has an insurance value of about \$900 million dollars as of 2021?

Answer: Mona Lisa

27. **Science computation:** Given that the half-life of uranium 235 to lead-207 is about 0.704 billion years, how old, in years, would a rock formation be if it had a 3.125% ratio of lead-207 to lead-204?

Answer: 3.52 billion years

OSSAA 2022-2023

DISTRICT GAME 3 THIRD QUARTER TOSS UP QUESTIONS

Team One Team Two

28. In 1912, this man, a future World War II general, participated in the pentathlon at the Olympic Games in Stockholm. Which four-star general succeeded Dwight D. Eisenhower as the military governor of the U.S. occupation zone in Germany during World War II?

Answer: George S. Patton

29. This singer has been inducted into the Country Music, Gospel Music, and Rock and Roll Music Halls of Fame. Name this "man in black" whose hits include "Folsom Prison Blues", "Ring of Fire", and "I Walk the Line."

Answer: Johnny Cash

30. The famous monologue which begins "All the world's a stage" takes place in Act II of this play by William Shakespeare. In which play does Orlando find the exiled Duke's camp in the Forest of Arden?

Answer: As You Like It

31. **Math Computation:** Convert 1872 inches into yards.

Answer: 52

32. This musical selection is the official National March of the U.S. What is the title of this piece by John Philip Sousa?

Answer: The Stars and Stripes Forever

33. The Krebs cycle is a series of reactions that release energy stored from the oxidation of this compound. Which compound combines with a four-carbon compound to create a six-carbon compound and coenzyme A during the first step of the Krebs cycle?

Answer: Acetyl-CoA [uh SEET uhl-koh ay]

34. The volume of water in this lake is equal to that of all five Great Lakes combined. Which lake is the deepest lake in the world?

Answer: Lake Baikal

OSSAA 2022-2023

DISTRICT GAME 3 THIRD QUARTER TOSS UP QUESTIONS

Team One Team Two

35. On April 28th, 2022, two Russian bombs hit Kyiv while this foreign dignitary was visiting the Ukrainian capital. Which UN secretary-general from Portugal has been in office since 2017?

Answer: Antonio Manuel de Oliveira Guterres

36. This American author's poems about American industrial life won him Pulitzer Prizes in 1919 and in 1951. Which man also won a Pulitzer Prize for history in 1940 for his biography of a U.S. president?

Answer: Carl Sandburg

37. **Math Computation:** Find all solutions of the equation: $2x^3 + 8x^2 - 64x = 0$ [2 x cubed plus 8 x squared minus 64x equals zero].

Answer: (x=) 0, 4, -8 {must have all three; any order}

38. This ancient Greek sculptor represented Achilles in the sculpture known as Doryphoros. Which sculptor is given credit for this sculpture commonly called the Spear-Bearer?

Answer: Polykleitos

39. In March 2022, it was announced that this man would be joining Amazon to be the game analyst for their broadcasts of Thursday Night Football. Name this broadcaster who will continue being the number one analyst of college football for ESPN.

Answer: Kirk Herbstreit

40. This precursor of modern English was phased out by the Great Vowel Shift. Which language did Chaucer use when writing *The Canterbury Tales*?

Answer: Middle English

OSSAA 2022-2023

**DISTRICT GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

OKLAHOMA HISTORY - COUNTY SEATS

Directions: Given the name of an Oklahoma county, name the city that serves as the county seat.

- | | | |
|-----|------------|------------------|
| 1. | Woods | Alva |
| 2. | Texas | Guymon |
| 3. | Sequoyah | Sallisaw |
| 4. | Pushmataha | Antlers |
| 5. | Pittsburg | McAlester |
| 6. | Noble | Perry |
| 7. | McClain | Purcell |
| 8. | Bryan | Durant |
| 9. | Blaine | Watonga |
| 10. | Caddo | Anadarko |

EXTRA:

- | | | |
|----|----------|---------------|
| 1. | Dewey | Taloga |
| 2. | Comanche | Lawton |

OSSAA 2022-2023

**DISTRICT GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH - SIMPLIFY LOGARITHMIC EXPRESSIONS

Directions: Simplify the following logarithmic expressions.

- | | | |
|-----|-----------------------------------------|----------------------------------|
| 1. | $\log_2 32$ [log base 2 of 32] | 5 |
| 2. | $\log_3 81$ [log base 3 of 81] | 4 |
| 3. | $\log_4 264$ [log base 4 of 256] | 4 |
| 4. | $\log_5 25$ [log base 5 of 25] | 2 |
| 5. | $\log_6 216$ [log base 6 of 216] | 3 |
| 6. | $\log_2 1/64$ [log base 2 of 1 over 64] | -6 |
| 7. | $\log_{64} 8$ [log base 64 of 8] | 1/2 (or 0.5) |
| 8. | $\log_9 27$ [log base 9 of 27] | 3/2 (or 1&1/2 or 1.5) |
| 9. | $\log_{32} 64$ [log base 32 of 64] | 6/5 (or 1&1/5 or 1.2) |
| 10. | $\log_{36} 216$ [log base 36 of 216] | 3/2 (or 1&1/2 or 1.5) |

EXTRA:

- | | | |
|----|----------------------------------|----------------------------------|
| 1. | $\log_4 32$ [log base 4 of 32] | 5/2 (or 2&1/2 or 2.5) |
| 2. | $\log_3 243$ [log base 3 of 243] | 5 |

OSSAA 2022-2023

**DISTRICT GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

U.S. HISTORY - NAME THE WAR

Directions: Given an event in U.S. history, name the war in which that event occurred.

- | | |
|--------------------------------------------------------------|----------------------------------------------|
| 1. The Gulf of Tonkin incident | Vietnam |
| 2. The Battle of Lake Erie | War of 1812 |
| 3. General Sherman's March to the Sea | Civil War |
| 4. Sinking of the RMS Lusitania | World War I |
| 5. The Battle of San Juan Heights | Spanish-American War |
| 6. Battle of Cowpens | Revolutionary War |
| 7. General MacArthur relieved of command, addresses Congress | Korean War |
| 8. Bear Flag Republic established | Mexican War (accept Mexican-American) |
| 9. The Battle of Britain | World War II |
| 10. Operation Desert Storm | Persian <u>Gulf</u> War |

EXTRA:

- | | |
|-----------------------------------------|------------------|
| 1. Tet Offensive | Vietnam |
| 2. Congress passes the Confiscation Act | Civil War |

OSSAA 2022-2023

DISTRICT GAME 3 EXTRA QUESTIONS

Extra:

Team One Team Two

- E1. **Science computation:** What is the power rating, in watts, of a reading light that has a potential difference of 3.50 volts when it carries a current of 4.20 amperes?

Answer: 14.7

- E2. This Oklahoma town is named after the Native American group of which Cochise and Geronimo were members. Which town takes its name from this group of 13 tribes, 3 of which reside in Oklahoma?

Answer: Apache

- E3. **Math Computation:** A student draws three cards from a standard deck of 52 cards. What is the reduced fractional probability that the cards will be a king, a spade, then a heart, if the first two cards are replaced before the next is drawn?

Answer: 1/208

- E4. This legume is the main ingredient in hummus. Which legume is also ground into flour and used for falafel?

Answer: Chickpea

- E5. This team had to score three goals in five minutes to beat Aston Villa and win the 2022 Premier League Championship. Name this team managed by Pep Guardiola that has won the English Premier League four out of the last five years.

Answer: Manchester City Football Club

- E6. This type of pronoun directs the action of a verb back to the subject. Which type of pronoun ends in -self or -selves?

Answer: Reflexive

- E7. **Math Computation:** What is the measure of each of the exterior angles in a regular hexagon, in degrees?

Answer: 60

OSSAA 2022-2023

**DISTRICT GAME 3
EXTRA QUESTIONS**

Team One Team Two

- E8. In the U.S. Senate, the third-highest ranking individual in the majority party has this title. Which position also includes the responsibility for making sure the maximum number of members vote and vote the way the party wants?

Answer: Majority Whip

- E9. Some birds, especially birds of prey, have two of these in their eyes. Which points inside the eye, where the lenses direct light, allow the birds to have a wide angle of monocular vision as well as a narrower binocular vision for pursuit?

Answer: Foveae (focal points)

- E10. This container was originally made of steel and manufactured in Germany. Which five-gallon container, now usually made of high-grade plastic, was adopted by NATO early in World War II for carrying fuel, water and other liquids?

Answer: Jerrycan

OSSAA 2022-2023
REGIONAL GAME 1
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

1. This American author was a leading figure in the naturalism movement of the early 20th century. Which author's first novel was *Sister Carrie*?

Answer: Theodore Dreiser

2. In June 2022, an earthquake struck this country killing more than 1000 people and damaging more than 10,000 homes. Identify this country in which the earthquake struck the Paktika and Khost provinces southeast of Kabul.

Answer: Afghanistan

3. This Latin word is commonly used by historians to refer to the three decades preceding the U.S. Civil War. Which word translates as "before the war?"

Answer: Antebellum

4. **Science computation:** A deer hunter hangs a carcass from the rafters in his barn with a pulley system. If the system has 5 weight-bearing ropes, and the carcass weighs 175 pounds, what is the effort load, in pounds, that must be used to raise the carcass?

Answer: 35

5. This Post-Impressionist's bold style led directly to the Syntheticism movement of modern art. Which painter created his most famous works while in Martinique and Tahiti?

Answer: Paul Gauguin

6. Starting on July 16, 2022, the FCC established this three-digit phone number for people who are suffering with mental health issues. Which 3-digit number can be used for suicide prevention or other mental health issues?

Answer: 988

7. Plays by this author include *Saint Joan* and *Major Barbara*. Which author's most popular play inspired a Broadway musical and a movie about a Cockney flower seller pushed into high society?

Answer: George Bernard Shaw

OSSAA 2022-2023
REGIONAL GAME 1
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

8. **Math Computation:** Simplify $\sqrt{192}$ [radical 192] into simplest form.

Answer: $8\sqrt{3}$ [8 radical 3 or 8 times the square root of 3]

9. In May 1943, this German military unit tasked with desert warfare surrendered to combined British and American forces. Which military unit was headed by Commander Erwin Rommel?

Answer: Afrika Korps

10. This system of the body removes carbon dioxide while supplying the body with oxygen. Name this system where you would find the larynx, trachea, and lungs.

Answer: Respiratory

11. American composer John Cage was one of the pioneers of this type of piano. Which type of piano has miscellaneous objects inserted between the strings to get different sounds?

Answer: Prepared

12. This song hit number two on the Billboard Hot 100 for CCR in 1969, then hit number four for Ike and Tina Turner in 1971. Which iconic song has the lyrics "But I never saw the good side of the city, 'til I hitched a ride on a river boat queen?"

Answer: Proud Mary

13. After his wife's death, this poet published a collection of poems titled *Birthday Letters*. Which British poet was married to Sylvia Plath?

Answer: Ted Hughes

14. **Math Computation:** What are the coordinates of the focus for the parabola with equation: $y = \frac{1}{8}(x - 7)^2 + 3$ [y equals one eighth times the quantity x minus 7 end quantity squared plus 3]? Remember, the coordinates of the focus of a parabola are at $(h, k + 1/(4a))$ [h comma k plus one over 4a].

Answer: (7, 5)

OSSAA 2022-2023
REGIONAL GAME 1
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

15. As of 2022, this African country has the world's highest fertility rate. Which country is bounded on the south by Nigeria and Benin?

Answer: Niger

_____ _____

16. These sensory receptors in invertebrates are usually statocysts where a solid granule lies within a liquid-filled chamber. What is this type of receptor that uses the movement of the granule to determine up or down in deep water or underground?

Answer: Georeceptor

_____ _____

17. In 1917, an artist associated with this movement submitted a mass-produced urinal as a sculpture at an exhibition in New York City. Which art movement's name is a French word meaning "hobby horse"?

Answer: Dada (or Dadaism)

_____ _____

18. This man led the 2022 British Open at St. Andrews after 36 holes, struggled during the third round, but then shot a 64 in the fourth round. Name this Australian golfer who captured the Claret Jug, winning the 150th Open Championship.

Answer: Cameron Smith

_____ _____

19. Henry David Thoreau wrote this famous essay to express his view of the proper relationship between the individual and the government. Which essay argues for passive resistance against government policies with which one disagrees?

Answer: Civil Disobedience

_____ _____

20. **Math Computation:** What is the horizontal asymptote of the following rational function? $f(x) = (28x^3 + 12x - 30) / (7x^3 - 4x + 6)$ [F of x equals the quantity 28 x cubed plus 12x minus 30 end quantity over the quantity 7 x cubed minus 4x plus 6 end quantity].

Answer: y = 4

_____ _____

**OSSAA 2022-2023
REGIONAL GAME 1
SECOND QUARTER
60 SECOND QUESTIONS**

ENTERTAINMENT - MUSIC 1992

Directions: Identify the singer or group that had each of the following hit songs in 1992.

1. "Smells Like Teen Spirit" **Nirvana**
2. "I Will Always Love You" **Whitney Houston**
3. "Nothing Else Matters" **Metallica**
4. "Knockin' on Heaven's Door" **Guns N' Roses**
5. "Achy Breaky Heart" **Billy Ray Cyrus**
6. "Killing in the Name" **Rage Against the Machine**
7. "Baby Got Back" **Sir Mix-a-Lot**
8. "End of the Road" **Boyz II Men**
9. "Viva Las Vegas" **ZZ Top**
10. "Keep the Faith" **Bon Jovi**

EXTRA:

1. "Tears in Heaven" **Eric Clapton**
2. "Lithium" **Nirvana**

**OSSAA 2022-2023
REGIONAL GAME 1
SECOND QUARTER
60 SECOND QUESTIONS**

ENTERTAINMENT - MOVIES 1992

Directions: Identify each of the following movies that were released between January and December of 1992.

1. Street urchin finds the Genie's lamp and tries to woo the princess ***Aladdin***
2. New Yorker boys arrested for murder are defended by a relative who just passed the bar exam and his hairdresser mechanic fiancée ***My Cousin Vinny***
3. Minnesota lawyer serves community service as a coach of a youth hockey team ***The Mighty Ducks***
4. Female professional baseball league founded during World War II ***A League of Their Own***
5. Two losers put on a cable show from their basement, "party on, excellent!" ***Wayne's World***
6. Nightclub singer hides in convent and leads the choir into fame ***Sister Act***
7. Outlaw turned farmer travels to Big Whiskey to claim bounty for two cowboys ***Unforgiven***
8. Jim Henson's puppets tell the story of Ebenezer Scrooge ***The Muppet Christmas Carol***
9. Kevin is stranded in New York City again ***Home Alone 2: Lost in New York***
10. Jack Ryan stops a kidnapping attempt on Lord William Homes ***Patriot Games***

EXTRA:

1. Two streetballers hustle each other while girlfriend studies for Jeopardy ***White Men Can't Jump***
2. Former Secret Service agent protects singer Rachel Marron from a stalker ***The Bodyguard***

**OSSAA 2022-2023
REGIONAL GAME 1
SECOND QUARTER
60 SECOND QUESTIONS**

MUSIC - DISNEY SONGS

Directions: Given a song from a Disney animated movie, name the movie.

- | | | |
|-----|-----------------------------|----------------------------------------|
| 1. | “If I Didn't Have You” | Monsters Inc. |
| 2. | “We Don't Talk About Bruno” | Encanto |
| 3. | “Hakuna Matata” | The Lion King |
| 4. | “Heigh Ho” | Snow White and the Seven Dwarfs |
| 5. | “Sorcerer's Apprentice” | Fantasia |
| 6. | “I See the Light” | Tangled |
| 7. | “Kiss the Girl” | The Little Mermaid |
| 8. | “Colors of the Wind” | Pocahontas |
| 9. | “Friend Like Me” | Aladdin |
| 10. | “Bibbidi Bobbidi Boo” | Cinderella |

EXTRA:

- | | | |
|----|-------------------|-----------------------------|
| 1. | “Go the Distance” | Hercules |
| 2. | “Gaston” | Beauty and the Beast |

**OSSAA 2022-2023
REGIONAL GAME 1
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

21. After their chief surrendered to General Nelson A. Miles in 1877, this Native American tribe was sent to Oklahoma. Which Native American tribe of Idaho was led by Chief Joseph at the time of their surrender?

Answer: Nez Perce

22. Identify the term used for the 12 constellations through which the Sun passes as it moves along its ecliptic path during a calendar year. These 12 constellations include the crab, the twins, and the lion.

Answer: Zodiac

23. The five spices in pumpkin pie spice are cinnamon, cloves, allspice, ginger, and this spice. Which spice is ground from the seed of a tropical evergreen tree?

Answer: Nutmeg

24. This prequel movie released on Hulu on August 5th of 2022. Name this fifth movie in the *Predator* franchise that follows a Comanche warrior who is trying to protect her village from an alien hunter.

Answer: Prey

25. This four-letter interjection can be used as a dramatic expression of grief, pity, or concern. Which word, beginning with A, is often uttered while pressing the back of the wrist against the forehead?

Answer: Alas!

26. **Math Computation:** There are 210 quarters, 350 nickels, and 430 dimes in a bag. What are the reduced odds that a quarter will be drawn randomly?

Answer: 7 to 26

27. In 1900, the Boxer Rebellion in China tested this new U.S. policy. Which policy was a proposition to keep China open to equal trade with all countries?

Answer: Open Door Policy

**OSSAA 2022-2023
REGIONAL GAME 1
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

28. **Chemistry Computation:** What is the molecular formula for calcium oxalate?

Answer: CaC₂O₄ [C A C 2 O 4]

_____ _____

29. This language has the largest number of speakers in the world. Which hyphenated language family is spoken by 44% of the world's population and has about 445 living languages?

Answer: Indo-European

_____ _____

30. In a 2022 decision, the Supreme Court determined that this former coach was improperly fired for praying at football games. Which former football coach at Bremerton High School in Washington was fired after refusing to stop praying on the field after games?

Answer: Joseph Kennedy

_____ _____

31. In the novel *Jane Eyre*, this character, Mr. Rochester's wife, is kept hidden in the attic to hide her mental illness. What is the first name of the mad woman in the attic whose story is told in the novel *The Wide Sargasso Sea* by Jean Rhys?

Answer: Bertha Mason

_____ _____

32. **Math Computation:** What type of conic section is the following equation:
 $x^2 + 4y^2 - 4y + 2x - 21 = 0$ [x squared plus 4 y squared minus 4y plus 2x minus 21 equals zero]?

Answer: Ellipse

_____ _____

33. In the U.S., this two-word alliterative phrase refers to the time period between 1946 and 1964. What is this phrase for the time after World War II when marriage and birth rates rose dramatically, and divorce rates dropped?

Answer: Baby Boom

_____ _____

OSSAA 2022-2023
REGIONAL GAME 1
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

34. Expressed as a percentage, this is a measure of how much water vapor is in a mass of air compared to the maximum that the mass could hold. What is this measure expressed as a percentage in meteorology?

Answer: Relative humidity {Do not accept or prompt on “humidity”}

35. The 1659 portraits of Spain's 8-year-old infanta and her brother were the last portraits painted by this artist. Which Spanish artist used sharp contrasts of light resembling the tenebrism of earlier artists?

Answer: Diego Velázquez

36. This man burst onto the tennis scene in 1985, becoming the first unseeded player to win the Wimbledon singles title. Which German tennis player finished his career with 2 Australian, 3 French, and 1 US Open title to go along with his 3 Wimbledon titles?

Answer: Boris Becker

37. Maxwell Anderson wrote a play about this woman which he titled *Anne of the Thousand Days*. Which woman was the second wife of King Henry VIII of England for almost three years before he had her beheaded?

Answer: Anne Boleyn

38. **Math Computation:** The vertex angle in an isosceles triangle measures 67 degrees. What are the measures of the base angles in degrees?

Answer: 56.5

39. This English rebellion of 1381 was a protest against taxes and actions of the government of King Richard II. What was the name for this rebellion led by Wat Tyler?

Answer: Peasants' Revolt

40. Organisms from the Archaea and Bacteria domains reproduce through this asexual reproduction method. In which reproductive method does a single organism split into two parts that regenerate to be genetically identical?

Answer: Binary fission

**OSSAA 2022-2023
REGIONAL GAME 1
FOURTH QUARTER
60 SECOND QUESTIONS**

LITERATURE - AUTHORS WHO USE INITIALS

Directions: Given the name of an author who uses initials for part of his or her name, give the first name of that author.

- | | | |
|-----|---------------------|------------------|
| 1. | J. R. R. Tolkien | John |
| 2. | J. K. Rowling | Joanne |
| 3. | E. B. White | Elwyn |
| 4. | H. G. Wells | Herbert |
| 5. | R. L. Stine | Robert |
| 6. | F. Scott Fitzgerald | Francis |
| 7. | V. S. Naipaul | Vidiadhar |
| 8. | W. H Auden | Wystan |
| 9. | T. H. White | Terence |
| 10. | L. Frank Baum | Lyman |

EXTRA:

- | | | |
|----|----------------|------------------|
| 1. | L. Ron Hubbard | Lafayette |
| 2. | E. M. Forster | Edward |

**OSSAA 2022-2023
REGIONAL GAME 1
FOURTH QUARTER
60 SECOND QUESTIONS**

AMERICAN HISTORY - THE 13 COLONIES

Directions: Identify each of the following concerning the 13 colonies that eventually became the United States.

- | | | |
|-----|---------------------------------------------------------------------|-----------------------------------------------|
| 1. | First successful colony established | Virginia |
| 2. | Last colony established | Georgia |
| 3. | Colony whose founder covered his face because of facial cancer | Delaware |
| 4. | Held the first Thanksgiving feast | <u>Massachusetts Bay (or Plymouth)</u> |
| 5. | Roger Williams was the founder | Rhode Island |
| 6. | Founded to create a safe place for Roman Catholics | Maryland |
| 7. | These two colonies started as a gift to a Duke from the Dutch | <u>New York and New Jersey</u> |
| 8. | Colony founded by a Quaker | Pennsylvania |
| 9. | Virginians fed up with religious laws moved to this two-colony area | Carolina (North and South) |
| 10. | Colony which was called East and West until 1704 | New Jersey |

EXTRA:

- | | | |
|----|-----------------------------------------------------------------|-----------------|
| 1. | Number of New England colonies | 4 |
| 2. | Virginia and North Carolina were part of this colonial grouping | Southern |

OSSAA 2022-2023
REGIONAL GAME 1
FOURTH QUARTER
60 SECOND QUESTIONS

MATH - POWERS OF IMAGINARY NUMBERS

Directions: Simplify each of the following involving powers of imaginary numbers.

- | | | |
|-----|--------------------------------------------|-----|
| 1. | i^{43} [i to the 43 rd power] | -i |
| 2. | i^{23} | -i |
| 3. | i^{36} | 1 |
| 4. | i^{50} | -1 |
| 5. | i^{17} | i |
| 6. | i^{65} | i |
| 7. | i^{75} | -i |
| 8. | $i^{27} - i^{37}$ | -2i |
| 9. | $i^{41} + i^{57}$ | 2i |
| 10. | $i^{14} + 2i^{52}$ | 1 |

EXTRA:

- | | | |
|----|-----------|----|
| 1. | i^{85} | i |
| 2. | i^{111} | -i |

OSSAA 2022-2023
REGIONAL GAME 1
EXTRA QUESTIONS

Extra:

Team One **Team Two**

- E1. This composer met his partner Lorenz Hart in 1919 and they worked together on 28 stage musicals before Hart's death in 1943. Which composer may be more famous for the Broadway shows he created with Oscar Hammerstein II?

Answer: Richard Rodgers

- E2. **Math Computation:** Kloe earns \$12.50 per hour working as a checker at the grocery store. How much will she earn for 36 hours of work in a week?

Answer: \$450

- E3. Much of Shakespeare's work is written in this type of pentameter. Which type of pentameter has feet made up of one unstressed and one stressed syllable?

Answer: Iambic

- E4. In June 2022, this player was banned from Twitch for the fourth time for streaming hateful conduct. Which Youtuber, born Dimitri Raymondo Antonatos, is known for his livestreams, reactions, and League of Legends gameplay videos?

Answer: Greekgodx

- E5. Accumulations of unconsolidated debris in current or formerly glaciated regions are referred to as this term. Which M word applies to the area known as "The Mothership" in Canada?

Answer: Moraine

- E6. This philosopher and psychologist founded the University of Chicago Laboratory Schools. Which educator is well-known for his idea that students thrive the most when they are allowed to interact with the curriculum and take part in their own learning?

Answer: John Dewey

- E7. The 101-story skyscraper in this city is the tallest building in the People's Republic of China. Which city is home to this skyscraper taller than Taipei 101?

Answer: Shanghai

OSSAA 2022-2023
REGIONAL GAME 1
EXTRA QUESTIONS

Team One Team Two

- E8. **Math Computation:** Simplify $16^{-3/2}$ [16 to the negative three halves power].

Answer: 1/64

- E9. The Newbery Medal is handed out annually for books in this genre. In which genre of books would you find the 2022 Newbery winner, *The Last Cuentista*, written by Donna Barba Higuera?

Answer: Children's Literature

- E10. **Science computation:** Using Charles's Law, a gas with a volume of 450 milliliters at 750 Kelvin will have what volume when the temperature is increased to 900 Kelvin? Put your answer in milliliters.

Answer: 540

OSSAA 2022-2023
REGIONAL GAME 2
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

1. **Math Computation:** What is the slope of the tangent line to the equation: $y = 1 - \cos x$ [y equals 1 minus cosine x] at the point $x = \pi$ over 3?

Answer: $\sqrt{3}/2$ [radical 3 over 2] (or $\frac{1}{2} \sqrt{3}$)

_____ _____

2. This U.S. state is home to the largest protected area of tallgrass prairie in the world. In which state can you visit the Joseph H. Williams Tallgrass Prairie Preserve near the town of Pawhuska?

Answer: Oklahoma

_____ _____

3. Two sister chromatids are joined together by this common point. What is the term for this point of constriction of the sister chromatids where spindle fibers are attached during mitosis?

Answer: Centromere

_____ _____

4. This French culinary term is often applied to meat or fish served raw. Which term indicates a finely chopped preparation of raw meat or fish?

Answer: Tartare [tahr-tahr]

_____ _____

5. In July 2022, a dust storm in this state caused a 21-car pileup, killing six. In which state did the pileup occur on I-90 in Big Horn County, about 50 miles east of Billings?

Answer: Montana

_____ _____

6. This four-word phrase associated with natural selection was actually coined by philosopher Herbert Spencer. Which phrase, often mentioned when speaking of Darwin's theory, means only the strong prevail?

Answer: Survival of the fittest

_____ _____

7. **Math Computation:** Jay's gross pay is \$420. He pays \$64.80 in FICA, \$43.70 in federal taxes, and \$14.20 in state taxes. What will be his net pay?

Answer: \$297.30

_____ _____

OSSAA 2022-2023
REGIONAL GAME 2
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

8. This Boston lawyer was the first Jewish person to be appointed to the U.S. Supreme Court. Which justice developed a new approach to arguing cases using fact-based evidence rather than legal theory?

Answer: Louis D. Brandeis

_____ _____

9. Spell the term defined by sociologists as violations to the societal norms that surpass the tolerance level of the group and result in negative sanctions. Spell deviance.

Answer: D-E-V-I-A-N-C-E

_____ _____

10. In a traditional paso doble dance, the man portrays this character seen at a corrida. What part is the man playing as he moves the woman like a cape?

Answer: Matador (bullfighter)

_____ _____

11. In August 2022, it was announced that this show, which had been on the air for 57 years, would leave NBC. Name this daytime soap opera now streaming on Peacock instead.

Answer: Days of Our Lives

_____ _____

12. This author used the pseudonym Geoffrey Crayon for his work known as *The Sketchbook*. Which short story author also wrote *The Devil and Tom Walker*?

Answer: Washington Irving

_____ _____

13. **Math Computation:** Find both factors of the following quadratic expression: $x^2 - 7x - 120$ [x squared minus 7x minus 120].

Answer: (x - 8) and (x + 15) {either order}

_____ _____

14. In 1676, this Virginia planter led the first popular revolt in England's North American colonies. Which man's rebellion started as attacks on Native Americans by colonists and ended as a rebellion against Governor William Berkeley?

Answer: Nathaniel Bacon

_____ _____

OSSAA 2022-2023
REGIONAL GAME 2
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

15. **Science computation:** What is the molecular formula for magnesium dichromate?

Answer: MgCr₂O₇ [M G C R 2 O 7]

16. This type of early photography was first developed by William Talbot in 1841. Which type of photography, which produces both a positive and negative image, is characterized by its very grainy quality?

Answer: Calotype

17. In June 2022, copper miners in this country went on strike over the shutting down of the Ventanas smelter in the Valparaiso region. In which country did the national strike go on for a week before the Codelco board in Santiago agreed to modify the smelter instead of closing it completely?

Answer: Chile

18. Estragon and Vladimir are the main characters in this famous tragicomedy in two acts. What is the title of this play by Irish playwright Samuel Beckett?

Answer: Waiting for Godot

19. **Math Computation:** What is the amplitude of the following sinusoidal function? $y = 4 \sin 5(x + \pi/3)$ [y equals 4 sine of 5 times the quantity x plus pi over 3 end quantity].

Answer: 4

20. In 1919, Austria and the Allied Powers signed this treaty, concluding World War I. Which treaty, the official notice of the breakup of the Habsburg empire, took effect on July 16, 1920?

Answer: Treaty of Saint-Germain

OSSAA 2022-2023
REGIONAL GAME 2
SECOND QUARTER
60 SECOND QUESTIONS

MEDICAL SPECIALISTS

Directions: Given an area of study, identify the name for a doctor that specializes in that field.

- | | | |
|-----|----------------------------------------------------|--------------------------------|
| 1. | Treats disorders of the feet | Podiatrist |
| 2. | Specializes on poisons and antidotes | Toxicologist |
| 3. | Straightens teeth | Orthodontist |
| 4. | Treats newborns, especially preemies | Neonatologist |
| 5. | Specialist who makes glasses and corrective lenses | Optician |
| 6. | Disorders of the kidney | Nephrologist |
| 7. | Treats gland disorders | Endocrinologist |
| 8. | Delivers babies | Obstetrician (or OBGYN) |
| 9. | Chest and lung surgery | Thoracic Surgeon |
| 10. | Surgery because of obesity | Bariatric surgeon |

EXTRA:

- | | | |
|----|------------------------|---------------------|
| 1. | Disorders of the teeth | Dentist |
| 2. | Disorders of the heart | Cardiologist |

**OSSAA 2022-2023
REGIONAL GAME 2
SECOND QUARTER
60 SECOND QUESTIONS**

FINE ARTS - SCULPTORS AND PAINTERS

Directions: Given the title of a famous sculpture or painting, name the artist.

- | | | |
|-----|---------------------------------|------------------------------------|
| 1. | The Burghers of Calais | Auguste <u>Rodin</u> |
| 2. | The Scream | Edvard <u>Munch</u> |
| 3. | Café Terrace at Night | Vincent <u>van Gogh</u> |
| 4. | Christina's World | Andrew <u>Wyeth</u> |
| 5. | The Sleeping Gypsy | Henri <u>Rousseau</u> |
| 6. | Lady with an Ermine | Leonardo <u>da Vinci</u> |
| 7. | Perseus with the Head of Medusa | Antonio <u>Canova</u> |
| 8. | The Storm on the Sea of Galilee | Rembrandt <u>van Rijn</u> |
| 9. | Ecstasy of Saint Theresa | Gian Lorenzo <u>Bernini</u> |
| 10. | The Naked Maja | Francisco de <u>Goya</u> |

EXTRA:

- | | | |
|----|------------------------------------|------------------------------------------|
| 1. | The Creation of Adam | <u>Michelangelo di Buonarotti</u> |
| 2. | Nude Descending a Staircase, No. 2 | <u>Marcel Duchamp</u> |

**OSSAA 2022-2023
REGIONAL GAME 2
SECOND QUARTER
60 SECOND QUESTIONS**

PEOPLE - US GOVERNMENT LEADERS

Directions: Identify the person holding each of the following positions in the federal government of the United States, as of October 1, 2022.

- | | |
|----------------------------------------------------|----------------------------------|
| 1. Senate Minority Leader | Mitch <u>McConnell</u> |
| 2. Senate Majority Leader | Chuck <u>Schumer</u> |
| 3. Secretary of Education | Miguel <u>Cardona</u> |
| 4. House Minority Whip | Steve <u>Scalise</u> |
| 5. President Pro Tempore of the Senate | Patrick <u>Leahy</u> |
| 6. Secretary of Homeland Security | Alejandro <u>Mayorkas</u> |
| 7. Secretary of Commerce | Gina <u>Raimondo</u> |
| 8. EPA Administrator | Michael <u>Regan</u> |
| 9. Director of the Office of Management and Budget | Shalanda <u>Young</u> |
| 10. Small Business Administration Administrator | Isabel <u>Guzman</u> |

EXTRA:

- | | |
|--------------------------------------|----------------------------|
| 1. Director of National Intelligence | Avril <u>Haines</u> |
| 2. House Majority Leader | Steny <u>Hoyer</u> |

OSSAA 2022-2023
REGIONAL GAME 2
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

21. In 1979, this amount was defined in terms of the number of atoms in 0.012 kg of Carbon-12. What is this measurement of the amount of a substance?

Answer: Mole

22. In 1985, this charity event took place in Philadelphia and London, featuring 60 acts that played for 16 hours. Which event featured a legendary 21-minute performance by Queen?

Answer: Live Aid

23. By May 2022, this video game had sold more than 13 million copies. Name this third-person, action, role-playing game, with a world built by George R. R. Martin, designed as an evolution of the *Dark Souls* game.

Answer: Elden Ring

24. Edgar Allan Poe's bird was the raven and John Keats wrote about a nightingale while Samuel Coleridge made this bird famous. Which bird was central to a famous poem by Coleridge?

Answer: Albatross

25. This communication protocol was created at PARC in 1973 to allow computers to connect on a network. Name this protocol used to connect wired devices to each other through routers, cables, and the associated ports on the computers themselves.

Answer: Ethernet

26. An isolated volcanic mountain that is more than 660 feet underwater is known by this geography term. Which term applies to a seamount with a flat top?

Answer: Guyot

27. **Science computation:** A wave of wavelength 1.75 meters oscillates at 8.0 hertz. What is the speed of the wave in meters per second?

Answer: 14

OSSAA 2022-2023
REGIONAL GAME 2
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

28. A marble bust of Medusa, created by this Baroque sculptor, can be seen at the Capitoline Museum in Rome. Which sculptor also created the colonnade for St. Peter's Basilica in Vatican City and the Fountain of the Four Rivers in Piazza Navona?

Answer: Gian Lorenzo Bernini

29. The win in the final of this tournament by the United States Women's National Team earned them a place in the 2024 Olympic Games and the 2024 Gold Cup. Name this soccer tournament where the U.S. beat Canada behind a penalty kick by Alex Morgan in July 2022.

Answer: CONCACAF Women's Championship

30. In persuasive writing, the main thesis is known by this term. Which term names the statement that the evidence and support are meant to persuade the reader to embrace?

Answer: Argument

31. **Math Computation:** Use the quadratic formula to find both solutions to the following equation: $x^2 + 8x + 2 = 0$ [x squared plus 8x plus 2 equals zero]. Reduce your answers but leave your answers in radical form.

Answer: $-4 \pm \sqrt{14}$ [negative 4 plus or minus radical (square root of) 14 (or -4 plus radical 14 and -4 minus radical 14)]

32. This fort in far southeastern Oklahoma served as the point of dispersal for Choctaws removed to Oklahoma from the southeastern United States. Near which fort did Stand Watie surrender his command, becoming the last Confederate general to lay down arms?

Answer: Fort Towson

33. This type of front forms when a warm air mass overtakes a cold air mass. Which front forms a gradual slope, pushing clouds far ahead and much higher than the base of the front?

Answer: Warm front

**OSSAA 2022-2023
REGIONAL GAME 2
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

34. Chocolate and cherries are a big part of this cake named for a region in Germany. Which cake is named for the mountain region in southwest Germany known for its cuckoo clocks and as the source of the Danube River?

Answer: Black Forest Cake

35. This woman was a surprise witness at the January 6th committee meeting in June 2022 to prevent anyone tampering with her deposition. Which former White House aide claimed President Trump lunged for the steering wheel of his vehicle when being told he wouldn't get to go to the Capitol during the riot?

Answer: Cassidy Hutchinson

36. The fictional language used by this race on the Star Trek series of TV shows and movies was created by linguist Mark Okrand. What is the native language of the character Worf?

Answer: Klingon

37. **Math Computation:** Triangles DEF and GHI are similar. If the measure of angle D is 39 and angle E is 77, what is the measure of angle I?

Answer: 64

38. Until the Great Stock Market Crash of 1929, the stock market of the 1920s was described as this type of market. Which type of market is present when stock prices are rising?

Answer: Bull Market

39. This author is wanted for questioning by authorities in Zambia for the murder of a poacher in 1966. Name this best-selling author of *Where the Crawdads Sing*.

Answer: Delia Owens

40. This Greek mythological character had the head of a lion, the body of a goat, and the tail of a serpent. Which creature terrorized the kingdom of Lycia?

Answer: Chimera

**OSSAA 2022-2023
REGIONAL GAME 2
FOURTH QUARTER
60 SECOND QUESTIONS**

GEOGRAPHY - CONTINENTAL SUPERLATIVES

Directions: Given a continental superlative, name the continent.

- | | | |
|-----|---------------------------------------|------------------------|
| 1. | Highest peak- Kilimanjaro | Africa |
| 2. | Smallest country- Maldives | Asia |
| 3. | Smallest country- St. Kitts and Nevis | North America |
| 4. | Lowest point- Denman Glacier | Antarctica |
| 5. | Longest river- Murray River | Oceania (or Australia) |
| 6. | Largest lake- Titicaca | South America |
| 7. | Longest river- Volga | Europe |
| 8. | Smallest country- Seychelles | Africa |
| 9. | Highest peak- Elbrus | Europe |
| 10. | Highest peak- Aconcagua | South America |

EXTRA:

- | | | |
|----|----------------------------|---------------|
| 1. | Largest city- Mexico City | North America |
| 2. | Smallest country- Suriname | South America |

**OSSAA 2022-2023
REGIONAL GAME 2
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH – SOLVING PROPORTIONS

Directions: Solve the following proportions to find x. You do not need to say “x equals”.

- | | | |
|-----|------------------------------------------------|----------------|
| 1. | $8 / 12 = 10 / x$ [8 over 12 equals 10 over x] | (x=) 15 |
| 2. | $6 / 8 = x / 20$ | 15 |
| 3. | $6 / 15 = x / 35$ | 14 |
| 4. | $15 / 18 = x / 42$ | 35 |
| 5. | $21 / 9 = 28 / x$ | 12 |
| 6. | $36 / x = 21 / 14$ | 24 |
| 7. | $20 / 12 = 25 / x$ | 15 |
| 8. | $24 / x = 16 / 12$ | 18 |
| 9. | $36 / x = 42 / 77$ | 66 |
| 10. | $x / 8 = 49 / 14$ | 28 |

EXTRA:

- | | | |
|----|--------------------|-----------|
| 1. | $15 / 21 = 60 / x$ | 84 |
| 2. | $27 / x = 72 / 40$ | 15 |

**OSSAA 2022-2023
REGIONAL GAME 2
FOURTH QUARTER
60 SECOND QUESTIONS**

LITERATURE - MOVIES BASED ON BOOKS

Directions: I will give you the name of a movie based on a book. Name the author of the book.

- | | | |
|-----|---------------------------------|----------------------------------|
| 1. | Sense and Sensibility | Jane <u>Austen</u> |
| 2. | The Silence of the Lambs | Thomas <u>Harris</u> |
| 3. | The Talented Mr. Ripley | Patricia <u>Highsmith</u> |
| 4. | It | Stephen <u>King</u> |
| 5. | The Joy Luck Club | Amy <u>Tan</u> |
| 6. | The Princess Bride | William <u>Goldman</u> |
| 7. | The Shawshank Redemption | Stephen <u>King</u> |
| 8. | Jurassic Park | Michael <u>Crichton</u> |
| 9. | The White Tiger | Aravind <u>Adiga</u> |
| 10. | The Perks of Being a Wallflower | Stephen <u>Chbosky</u> |

EXTRA:

- | | | |
|----|--------------------|-------------------------------|
| 1. | A Clockwork Orange | Anthony <u>Burgess</u> |
| 2. | A Walk to Remember | Nicholas <u>Sparks</u> |

OSSAA 2022-2023
REGIONAL GAME 2
EXTRA QUESTIONS

Extras:

Team One **Team Two**

- E1. This 9-letter term is used in anatomy to refer to something in or around the back of the head. What is this word that starts with an “O”?

Answer: Occipital

- E2. Before she published the series for which she is best known, this author published a series called *The Underland Chronicles*. Which author gained fame with *The Hunger Games*?

Answer: Suzanne Collins

- E3. **Math Computation:** What is the x-intercept of the following line written in standard form: $7x - 15y = 126$?

Answer: (x=) 18

- E4. In 1986, a magazine broke this scandal of the Reagan administration. Which scandal involved the secret sale of weapons to fund anti-Communist rebels in Nicaragua?

Answer: Iran-Contra Affair

- E5. This song reached number one on the Billboard Hot 100 in August 2022. Name this Beyonce song with the lyrics “Now I just fell in love and I just quit my job, I’m gonna find new drive.”

Answer: Break My Soul

- E6. In 2006, a painting by this artist, titled *No. 5, 1948*, sold for \$140 million. Which artist had to repair the painting after a dollop of paint fell off during delivery?

Answer: Jackson Pollock

- E7. **Math Computation:** Students in a class were asked whether they like Kansas or Arkansas. Of the 25 students, 16 liked Kansas, 12 liked Arkansas, and 7 liked both. How many liked neither one?

Answer: 4

**OSSAA 2022-2023
REGIONAL GAME 2
EXTRA QUESTIONS**

Team One Team Two

- E8. In a theater, the areas that are out of view on each side of the stage are known by this term. What is this term that Icarus might be familiar with?

Answer: Wings

_____ _____

- E9. In drier climates, this temperature point will be lower, while in hot humid climates it will often be very close to the outside temperature. What is the term for the temperature at which condensation will occur?

Answer: Dew point

_____ _____

- E10. In World War II, British Prime Minister Neville Chamberlain was an advocate for this policy regarding Hitler's expansion of German territory. Which policy is defined as the making of concessions to an aggressor to avoid a war?

Answer: Appeasement

_____ _____

OSSAA 2022-2023
REGIONAL GAME 3
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

1. This song won the 2019 Oscar for Original Song. Which song by Elton John and Bernie Taupin was heard in the end credits of the film *Rocketman*?

Answer: (I'm Gonna) Love Me Again

2. In 2022, the World Health Organization declared this disease a global health emergency. Which virus spread outside of Africa in May, showing up in the United Kingdom and then other countries by August?

Answer: Monkeypox

3. The Poetry Society of America changed the name of its Gold Medal of Distinction to the last name of this poet, who won the award in 1941. Which poet penned the line "Nothing gold can stay?"

Answer: Robert Frost

4. A snake's tongue is a secondary olfactory organ that samples airborne chemicals and transmits smells to this primary olfactory organ. Which pouches, located in the mouth, interpret the molecules sensed and collected by the tongue?

Answer: Jacobson's organs (or vomeronasal organ)

5. Before 2019, this world capital city was known as Astana. What is the current name of the capital city of Kazakhstan?

Answer: Nur-Sultan

6. Between the years of 2007 and 2012, this American scored 50 goals for Fulham in the English Premier League. Which forward/midfielder is tied with Landon Donovan for the most goals for the U.S. men's national team?

Answer: Clint Dempsey

7. King Charles III's first public speech was broadcast from this London building designed by architect Christopher Wren. Which cathedral did Wren redesign after the old cathedral was destroyed in the Great Fire of London in 1666?

Answer: St. Paul's Cathedral

OSSAA 2022-2023
REGIONAL GAME 3
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

8. **Math Computation:** Find x given the following system of equations:
 $2x + 3y - z = 20$, $x - 2y + z = -7$, and $2x - y = 2$. Hint: you will want to use elimination with the first 2 equations to get rid of the z term.

Answer: (x=) 3

9. Time Magazine's Person of the 20th Century was this scientist who first appeared on the cover in 1929. Which scientist renounced his German citizenship in 1896 to attend school in Switzerland?

Answer: Albert Einstein

10. **Science computation:** What is the total resistance, in ohms, flowing through a series circuit of 3 resistors if the resistances through them are 16, 16, and 24 ohms?

Answer: 56

11. This 19th century cattle drovers' trail originated south of San Antonio, Texas and ended at Abilene, Kansas. Which trail once ran through what is now downtown Tuttle, Oklahoma?

Answer: Chisholm Trail

12. In July 2022, this member of the Japanese House of Representatives and former prime minister was shot and killed. Name this man who was the longest serving prime minister in Japanese history.

Answer: Shinzo Abe

13. This red chili pepper and the capital of French Guiana share the same name. Which type of pepper, native to French Guiana, is ground into powder and sold in the spice aisle?

Answer: Cayenne

14. **Math Computation:** Two trains leave the station at the same time, both traveling west, one traveling at 51 miles per hour, while the other travels at 33 miles per hour. How many hours will it take for the two trains to be 108 miles apart?

Answer: 6

OSSAA 2022-2023
REGIONAL GAME 3
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

15. To a chef, this word means to moisten meat with drippings. Which word, in sewing, means to attach temporarily with long stitches?

Answer: Baste

_____ _____

16. The nuclear type of this material includes protein- and non-protein coding genes along with structural DNA. What is the term for the complete genetic material of an organism?

Answer: Genome

_____ _____

17. During Franklin D. Roosevelt's first 100 Days, this program was created to provide government jobs in reforestation, flood control, and other conservation projects for men ages 18 to 25. Which New Deal program employed over 300,000 men?

Answer: Civilian Conservation Corps (or CCC)

_____ _____

18. In June 2022, this man became the most followed person on TikTok, even though he doesn't say a word in his videos. Which social media personality with 147 plus million followers mocks other's life hack videos by doing the task in a much simpler way?

Answer: Khaby Lame

_____ _____

19. Angkor Wat, the temple complex built in the Khmer empire, was dedicated to this Hindu god. Which Hindu deity is known as the protector and preserver of the universe?

Answer: Vishnu

_____ _____

20. **Math Computation:** Company Z has a market share of 25 points. If they produce 1150 units per year, what is the total number of units sold per year in this market?

Answer: 4600

_____ _____

**OSSAA 2022-2023
REGIONAL GAME 3
SECOND QUARTER
60 SECOND QUESTIONS**

SPORTS HISTORY - SUPER BOWL WINNERS

Directions: Identify each of the following Super Bowl winning teams from the year the game was played, the coach of the team, and the quarterback. Give the full name of the team, like: Detroit Lions.

- | | |
|--------------------------------------|-----------------------------|
| 1. 2017, Bill Belichick, Tom Brady | New England Patriots |
| 2. 2020, Andy Reid, Patrick Mahomes | Kansas City Chiefs |
| 3. 2021, Bruce Arians, Tom Brady | Tampa Bay Buccaneers |
| 4. 1989, George Seifert, Joe Montana | San Francisco 49ers |
| 5. 2012, Tom Coughlin, Eli Manning | New York Giants |
| 6. 2013, John Harbaugh, Joe Flacco | Baltimore Ravens |
| 7. 2000, Dick Vermeil, Kurt Warner | St. Louis Rams |
| 8. 1992, Joe Gibbs, Mark Rypien | Washington Redskins |
| 9. 1967, Vince Lombardi, Bart Starr | Green Bay Packers |
| 10. 1970, Hank Stram, Len Dawson | Kansas City Chiefs |

EXTRA:

- | | |
|-----------------------------------------|----------------------------|
| 1. 1981, Tom Flores, Jim Plunkett | Oakland Raiders |
| 2. 2006 Bill Cowher, Ben Roethlisberger | Pittsburgh Steelers |

**OSSAA 2022-2023
REGIONAL GAME 3
SECOND QUARTER
60 SECOND QUESTIONS**

CULINARY ARTS - NAME THAT INGREDIENT

Directions: From the information given, identify the following ingredients needed.

- | | |
|-------------------------------------------------------|-----------------------------------|
| 1. The really gooey part of a s'more | Marshmallow |
| 2. The main ingredient in marinara sauce | Tomato |
| 3. Meat used to make red-eye gravy | Ham |
| 4. Main ingredient in quiche filling | Eggs |
| 5. Ingredient brushed on focaccia bread before baking | Olive Oil |
| 6. Clotted dairy product served with scones | Cream |
| 7. Two main vegetables in succotash | <u>Corn and Lima Beans</u> |
| 8. Fruit traditionally used for an upside down cake | Pineapple |
| 9. Nut traditionally used in Greek Baklava | Walnut |
| 10. Traditional sauce used for Eggs Benedict | Hollandaise |

EXTRA:

- | | |
|----------------------------------------------------------------|-----------------------------|
| 1. Alcohol traditionally used to flambé bananas foster | Rum |
| 2. Ingredient that provides the vegetable in a Reuben sandwich | Cabbage (Sauerkraut) |

**OSSAA 2022-2023
REGIONAL GAME 3
SECOND QUARTER
60 SECOND QUESTIONS**

GEOGRAPHY - B COUNTRIES

Directions: Given the capital of a country that begins with the letter B, name the country.

- | | | |
|-----|------------|-------------------------------|
| 1. | Brussels | Belgium |
| 2. | Manama | Bahrain |
| 3. | Dhaka | Bangladesh |
| 4. | Bridgetown | Barbados |
| 5. | Minsk | Belarus |
| 6. | Nassau | The Bahamas |
| 7. | Belmopan | Belize |
| 8. | Porto-Novo | Benin |
| 9. | Sarajevo | Bosnia and Herzegovina |
| 10. | Gaborone | Botswana |

EXTRA:

- | | | |
|----|----------|-----------------|
| 1. | Brasilia | Brazil |
| 2. | Sofia | Bulgaria |

OSSAA 2022-2023
REGIONAL GAME 3
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

21. This 1864 novel was the last completed by Charles Dickens before his death. Which novel focused on a dustman who inherited dustheaps after the drowning of a young man?

Answer: Our Mutual Friend

22. Types of this process include furrow, sprinkler, flood, and trickle. What is this term for placing extra water on land in order to grow crops?

Answer: Irrigation

23. In 1827, this railroad became the first steam-operated railroad in the U.S. to carry passengers. Which railroad was established by merchants in Baltimore to compete with New York's Erie Canal?

Answer: Baltimore and Ohio (or B&O)

24. In June 2022, this former attorney for President Trump had his phone seized by FBI agents in New Mexico. Which election attorney reportedly asserted certification could be blocked and provided a six-point plan to get Vice President Pence to throw out electors, keeping Trump in office?

Answer: John Eastman

25. Claude Monet used the gardens of his own home in this French town as inspiration for many of his paintings of water lilies. Which town northwest of Paris was the site of an artist's colony of Impressionists?

Answer: Giverny

26. **Math Computation:** A group of shoppers at the mall were asked what they were shopping for that day. Out of the 60 shoppers, 35 were looking for clothes, 18 were shopping for apparel, while 12 responded neither one. How many were looking for both clothes and apparel?

Answer: 5

27. If you visit New York City and want to see a play, you might want to know this term for days the theaters are closed. What term refers to days when no performances will be held at theaters?

Answer: Dark days

OSSAA 2022-2023
REGIONAL GAME 3
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

28. **Science computation:** Using Boyle's Law, a gas with a volume of 540 milliliters is under pressure at 6.0 atmospheres. If the pressure is increased to 9.0 atmospheres, what will be the volume of the gas in milliliters?

Answer: 360

29. In 1973, this Chilean general led a coup to overthrow the government led by President Salvador Allende. Which general did away with the ruling council he had put into place with his coup and took sole power as president of Chile in 1974?

Answer: Augusto Pinochet

30. A song from this band was featured on the season 4 finale of *Stranger Things* in July 2022. Name this band whose song, "Master of Puppets", was an integral part of the episode.

Answer: Metallica

31. Traditionally, this Japanese musical instrument has three strings and is covered in dog or cat skin. Which instrument is used in Kabuki and puppet theaters in Japan?

Answer: Shamisen (sanxian)

32. **Math Computation:** What is the phase shift of the following sinusoidal function? $y = -4 \sin \frac{1}{3}(x + \pi/3)$ [y equals negative 4 sine of one third times the quantity x plus pi over 3 end quantity].

Answer: pi/3 left [pi over 3 left] (or 1/3 pi left)

33. This poetry term is defined as a pair of rhymed lines. What is this term that in some poems is heroic?

Answer: Couplet

**OSSAA 2022-2023
REGIONAL GAME 3
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

34. An MRI that scans the brain from top to bottom uses this type of body plane in the scan. What name do doctors give to a scan that is made along a horizontal plane to reveal superior and anterior views of a body part?

Answer: Transverse (or cross section)

35. This strait is located between Italy and Albania. Which strait separates the Adriatic from the Ionian Sea?

Answer: Strait of Otranto

36. **Math Computation:** The shortest side of a 30-60-90-degree triangle has a measure of 8 units. What are the exact lengths of the other two sides in the triangle?

Answer: 16 and $8\sqrt{3}$ [8 radical (square root) 3] {must have both}

37. This type of clay is best for creating pottery with a fine, porcelain-like finish. Which soft white clay is named after the hill in China from which it was mined for centuries?

Answer: Kaolin

38. In July 2022, this woman broke the world record in the 400-meter hurdles for the fourth time. Which American's fourth record came at the World Championships in Oregon, destroying her previous world record by 7 tenths of a second?

Answer: Sydney McLaughlin

39. In the movie *The Hours*, Nicole Kidman played this famous British author who committed suicide by putting stones in her pockets and walking into the River Ouse. Which author wrote *To the Lighthouse*?

Answer: Virginia Woolf

40. Factors used in this scale include central pressure, wind speed, and storm surge. What is this measurement system, numbered from 1 to 5, of the strength of a hurricane?

Answer: Saffir-Simpson scale

**OSSAA 2022-2023
REGIONAL GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH - ZEROS OF QUADRATICS

Directions: Find the zeros of each of the following quadratic expressions. You do not need to say “x equals”. {Moderator – the answers can be in either order, but they must have both.}

- | | | |
|-----|------------------------------------------------------------|-------------------|
| 1. | $x^2 - 2x - 48 = 0$ [x squared minus 2x minus 48 equals 0] | (x=) 8, -6 |
| 2. | $x^2 + 11x + 24 = 0$ | -3, -8 |
| 3. | $x^2 - 9x + 20 = 0$ | 4, 5 |
| 4. | $x^2 - 5x - 24 = 0$ | 8, -3 |
| 5. | $x^2 + 16x + 63 = 0$ | -7, -9 |
| 6. | $x^2 - 19x + 88 = 0$ | 8, 11 |
| 7. | $x^2 - 9x - 36 = 0$ | 12, -3 |
| 8. | $x^2 + 18x + 45 = 0$ | -15, -3 |
| 9. | $2x^2 + 11x - 6 = 0$ | -6, 1/2 |
| 10. | $3x^2 - 4x - 4 = 0$ | 2, -2/3 |

EXTRA:

- | | | |
|----|----------------------|----------------|
| 1. | $x^2 + 19x + 48 = 0$ | -16, -3 |
| 2. | $2x^2 - 3x - 2 = 0$ | 2, -1/2 |

**OSSAA 2022-2023
REGIONAL GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

SCIENCE - FORENSICS ABCs

Directions: Given a short description, identify each of the following terms from the field of forensics and law. Your answers will be alphabetical, starting with D.

- | | |
|--------------------------------------------------------------------------|-------------------------|
| 1. Process of breaking down a no-longer living organism | Decomposition |
| 2. Physical evidence brought before a jury | Exhibit |
| 3. Making or falsifying documents to deceive someone | Forgery |
| 4. Study of rocks and soil | Geology |
| 5. Upper layer of soil containing decaying remains of plants and animals | Humus |
| 6. Household chemical that can be sniffed for an intoxicating effect | Inhalant |
| 7. Location where bones meet in a body | Joint |
| 8. Fiber-rich protein that makes up most of the cortex of a hair | Keratin |
| 9. Removal of minerals as water drips through the soil | Leaching |
| 10. Public official in charge of investigating the manner of death | Medical examiner |

EXTRA:

- | | |
|------------------------------------------------------------------------------------------------|---------------------|
| 1. Chemical that reacts with amino acids and can be used to produce a fingerprint on a surface | Ninhydrin |
| 2. Process where soft cartilage is replaced by hard bone through the deposit of minerals | Ossification |

**OSSAA 2022-2023
REGIONAL GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

LITERATURE - NOTABLE AUTHORS OF THE 19TH CENTURY

Directions: Given the title of a work by a notable author of the 19th century, give the name of the author.

- | | | |
|-----|-----------------------------|---------------------------------------------------------|
| 1. | War And Peace | <u>Leo Tolstoy</u> |
| 2. | Frankenstein | <u>Mary Shelley</u> |
| 3. | The Metamorphosis | <u>Franz Kafka</u> |
| 4. | A Study in Scarlet | <u>Sir Arthur Conan Doyle</u> |
| 5. | Childe Harold's Pilgrimage | <u>(George Gordon) Lord Byron</u> |
| 6. | The Time Machine | <u>(Herbert George) H.G. Wells</u> |
| 7. | Mending Wall | <u>Robert Frost</u> |
| 8. | The Hunchback of Notre Dame | <u>Victor Hugo</u> |
| 9. | The Souls of Black Folk | <u>(William Edward Burghardt) W.E.B. Dubois</u> |
| 10. | Songs of Innocence | <u>William Blake</u> |

EXTRA:

- | | | |
|----|---------------------|--------------------------------------------------------|
| 1. | Alice in Wonderland | <u>Lewis Carroll (Charles Lutwidge Dodgson)</u> |
| 2. | Little Women | <u>Lousia May Alcott</u> |

OSSAA 2022-2023
REGIONAL GAME 3
EXTRA QUESTIONS

Extras:

Team One **Team Two**

- E1. This Oklahoma state park in LeFlore County sits atop Poteau Mountain. Which park's main attraction is a large, vertical, sandstone slab with strange markings, discovered in the 1830s by a Choctaw hunting party?

Answer: Heavener Runestone State Park

- E2. **Math Computation:** Divide $(x^3 - 8x + 8) / (x - 2)$ [the quantity x cubed minus $8x$ plus 8 end quantity by the quantity x minus 2 end quantity].

Answer: $x^2 + 2x - 4$ [x squared plus 2x minus 4]

- E3. Apple strudel is traditionally made with this type of dough. Which type of flaky pastry dough, with a Greek name meaning leaf, is also used in the Greek dish Spanakopita?

Answer: Phyllo dough

- E4. This man directed the movies *The Passion of the Christ*, *Hacksaw Ridge*, and *Apocalypto*. Name this Australian who starred as an actor in the series *Mad Max* and *Lethal Weapon*.

Answer: Mel Gibson

- E5. In the Greek alphabet, this letter comes before mu. Which letter's symbol resembles an upside-down Y?

Answer: Lambda

- E6. **Science computation:** What is the image distance of a diverging lens with a focal length of 30.0 centimeters if an object sits 10.0 centimeters in front of the lens? Remember that a diverging lens has a negative focal length.

Answer: 7.50 (or 7.5)

- E7. This government agency coordinates the gathering and evaluation of military and economics information on other nations. As of 2022, which agency, established in 1947, is headed by William J. Burns?

Answer: Central Intelligence Agency (or CIA)

OSSAA 2022-2023
REGIONAL GAME 3
EXTRA QUESTIONS

Team One Team Two

- E8. **Math Computation:** Two tangent lines intersect outside a circle. If the major arc formed from the intersection measures 300 degrees, what is the measure, in degrees, of the angle formed by these tangents?

Answer: 120

- E9. This letter is the only Scrabble letter to have a value of 5 points. What is this 11th letter of the alphabet?

Answer: K

- E10. **Chemistry calculation:** Knowing the charge on oxygen is negative 2, what is the oxidation number for Sulfur in the ion, SO_4^{2-} [S O 4 2 negative]?

Answer: +6 [positive 6]

OSSAA 2022-2023
REGIONAL GAME 4
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

1. **Math Computation:** Multiply the following binomials and put your answer in A plus B-I form. $(12 - 5i)(3 + 4i)$ [the quantity 12 minus 5i end quantity times the quantity 3 plus 4i]

Answer: **56 + 33i**

2. This 1935 novel tells the story of a girl who wins England's Grand National horse race on a horse she won in a raffle. Which Enid Bagnold book was adapted for a movie starring Elizabeth Taylor and Mickey Rooney in 1944?

Answer: **National Velvet**

3. Starch and glycogen are examples of these structures. What is the term for these chains of three or more simple sugars?

Answer: **Polysaccharides**

4. In 1774, Parliament passed these acts in response to the Boston Tea Party. What was the British name for these acts the colonists labeled the Intolerable Acts?

Answer: **Coercive Acts**

5. In July 2022, an avalanche on the largest glacier in this country caused the deaths of 11 hikers. In what European country did an avalanche on the Marmolada glacier crash down onto a popular hiking trail in the Dolomite mountains?

Answer: **Italy**

6. Edouard Manet's painting *Peonies* is an example of this type of painting. Which type of painting or drawing features an arrangement of objects, typically including fruit and flowers?

Answer: **Still Life**

7. **Math Computation:** A recipe calls for 2 tablespoons of vanilla. If a baker needs to increase the recipe 12-fold, how many **cups** of vanilla will he need?

Answer: **1.5 (or 1&1/2)**

OSSAA 2022-2023
REGIONAL GAME 4
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

8. This large aquifer in the U.S. is being recharged at a rate of just 10% of annual withdrawals. Which large aquifer underlies most of the state of Nebraska and extends into seven other central states?

Answer: Ogallala

9. According to Aristotle, this man was the first actor to appear on stage in a play. Which actor's name is the origin of the formal word defined as "an actor or actress?"

Answer: Thespis

10. This medical drama ran from 1994 to 2009 on NBC. Which series centered around the doctors and staff of County General Hospital in Chicago and originally starred George Clooney, Anthony Edwards, and Julianna Margulies?

Answer: ER

11. In 1941, U.S. president Franklin Roosevelt and British prime minister Winston Churchill signed this document. Which document was the basis for the Allied peace plan at the end of World War II?

Answer: Atlantic Charter

12. **Math Computation:** Use the quotient rule to find the derivative, with respect to x , of the following expression: $2x / (3x - 1)$ [2x over the quantity 3x minus 1 end quantity].

Answer: -2 / (3x - 1)² [negative 2 over the quantity 3x minus 1 end quantity squared]

13. In *The Magic Flute*, the two arias written by Mozart for the Queen of the Night are specifically written for this type of soprano. What is the name for a soprano voice capable of agile runs, leaps, and trills?

Answer: Coloratura

14. In 2021, this Native American poet won the American Poetry Society's Frost Medal. Which Kiowa poet from Lawton, Oklahoma authored the 1968 novel *House Made of Dawn*?

Answer: N. Scott Momaday

OSSAA 2022-2023
REGIONAL GAME 4
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

15. This chemical element is usually acquired from the mineral cassiterite and has 10 stable isotopes, more than any other element. Which metal with atomic number 50 is located between germanium and lead in group 14 on the periodic table?

Answer: **Tin**

_____ _____

16. This city on the Iberian Peninsula is home to the famous running of the bulls. Which Spanish city was featured in Ernest Hemingway's novel *The Sun Also Rises*?

Answer: **Pamplona**

_____ _____

17. In July 2022, this network issued an apology for superimposing the logos for the New York Yankees and Boston Red Sox onto the memorial pools at the National September 11 Memorial site in New York City. Which network used the graphic during their "Baseball Night in America" broadcast?

Answer: **Fox Sports**

_____ _____

18. In Greek architecture, this triangular part of a pediment is often decorated with relief sculptures. What is the name for this triangular section that, in modern times, often holds a clock face or an inscription?

Answer: **Tympanum**

_____ _____

19. **Math Computation:** Two fair 6-sided dice are rolled. What is the reduced fractional probability that the sum of the two dice will be equal to 9?

Answer: **1/9**

_____ _____

20. One of the very first uses of this 13-letter word beginning with A is in Shakespeare's play Macbeth. Which word refers to a murder for political purposes?

Answer: **Assassination**

_____ _____

**OSSAA 2022-2023
REGIONAL GAME 4
SECOND QUARTER
60 SECOND QUESTIONS**

BIOLOGY - SPELLING

Directions: Spell each of the following words commonly found in a high school biology course.

- | | |
|-------------------|------------------------------------|
| 1. Chromosome | C-H-R-O-M-O-S-O-M-E |
| 2. Genotype | G-E-N-O-T-Y-P-E |
| 3. Algae | A-L-G-A-E |
| 4. Telomere | T-E-L-O-M-E-R-E |
| 5. Lysogenic | L-Y-S-O-G-E-N-I-C |
| 6. Encapsidation | E-N-C-A-P-S-I-D-A-T-I-O-N |
| 7. Eukaryote | E-U-K-A-R-Y-O-T-E |
| 8. Homozygous | H-O-M-O-Z-Y-G-O-U-S |
| 9. Polysaccharide | P-O-L-Y-S-A-C-C-H-A-R-I-D-E |
| 10. Tetracycline | T-E-T-R-A-C-Y-C-L-I-N-E |

EXTRA:

- | | |
|--------------|--------------------------|
| 1. Plasmid | P-L-A-S-M-I-D |
| 2. Symbiosis | S-Y-M-B-I-O-S-I-S |

**OSSAA 2022-2023
REGIONAL GAME 4
SECOND QUARTER
60 SECOND QUESTIONS**

SPORTS HISTORY - SOCCER SUPERSTARS

Directions: Identify the home country for each of the following soccer superstars, all of whom were named by Sports Illustrated as one of “The 50 Greatest Footballers of All Time” in 2019.

- | | | |
|-----|-------------------|-----------------------|
| 1. | Lionel Messi | Argentina |
| 2. | Cristiano Ronaldo | Portugal |
| 3. | Pele | Brazil |
| 4. | Diego Maradona | Argentina |
| 5. | Ronaldo | Brazil |
| 6. | Luis Suarez | Uruguay |
| 7. | Gerd Muller | (West) Germany |
| 8. | Zinedine Zidane | France |
| 9. | Roberto Baggio | Italy |
| 10. | Johan Cruyff | Netherlands |

EXTRA:

- | | | |
|----|-------------------|-----------------------|
| 1. | Michael Platini | France |
| 2. | Franz Beckenbauer | (West) Germany |

**OSSAA 2022-2023
REGIONAL GAME 4
SECOND QUARTER
60 SECOND QUESTIONS**

MYTHOLOGY - CHARACTERS FROM GREEK MYTHOLOGY

Directions: Given a brief description, identify the following characters from Greek mythology.

- | | | |
|-----|-----------------------------------------------------------|--------------------|
| 1. | Son of Poseidon who killed the chimera | Bellerophon |
| 2. | Handsome youth loved by Aphrodite | Adonis |
| 3. | Goddess of love, beauty, and desire | Aphrodite |
| 4. | Lydian weaver who challenged Athena in a contest | Arachne |
| 5. | God of War | Ares |
| 6. | Collective name for group of heroes who sailed with Jason | Argonauts |
| 7. | One-hundred eyed monster killed by Hermes | Argus |
| 8. | Cretan princess who helped Theseus escape the Labyrinth | Ariadne |
| 9. | Goddess of hunting and childbirth | Artemis |
| 10. | Huntress who encountered the Calydonian boar | Atalanta |

EXTRA:

- | | | |
|----|--------------------------------------------------|---------------|
| 1. | Goddess of wisdom and war | Athena |
| 2. | Titan who had to carry the heavens as punishment | Atlas |

OSSAA 2022-2023
REGIONAL GAME 4
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

21. Spell the name of the meteorological device attached to a weather balloon sent high into the atmosphere to measure relative humidity, air pressure, and temperature. Spell radiosonde.

Answer: R-A-D-I-O-S-O-N-D-E

22. This Civil War battle was the first to be fought in Oklahoma. Which battle saw Confederate forces attempting to stop a group of Creek tribe members and Union supporters leaving Indian Territory for Kansas?

Answer: Battle of Round Mountain (or Battle of Red Fork)

23. At least 30 people died in this state when consecutive storms dumped heavy rain between July 25th and July 30th, 2022. In which state's Appalachian foothills did some communities see 14 inches or more of rain?

Answer: Kentucky

24. This company first produced its signature mustard in 1866. Which French company phased out production of its Dijon mustard in France in 1970, although the brand is still produced in America by Kraft foods?

Answer: Grey Poupon

25. **Math Computation:** What is the 13th term in an arithmetic sequence that begins with 5 and has a common difference of 8?

Answer: 101

26. This literary term refers to a listing of the principal words in a book such as the Bible. What is this 11-letter term beginning with C?

Answer: Concordance

27. **Science computation:** Two children are sitting on a balanced teeter-totter, with one child of 45 kilos sitting 8 feet from the fulcrum. How far must the other child sit, in feet, if they have a mass of 72 kilos and the teeter-totter isn't moving?

Answer: 5

**OSSAA 2022-2023
REGIONAL GAME 4
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

28. These four words in the Constitution characterize the kinds of conduct for which the President, Vice President, and all other civil officers may be impeached. Which words saved Justice Samuel Chase from being removed from the Supreme Court during the administration of Thomas Jefferson?

Answer: High Crimes and Misdemeanors

29. In a 2022 decision, the Supreme Court limited the authority of this agency to control greenhouse gases. Which agency was requiring current fossil fuel power plants to change over to non-greenhouse gas emitting forms of energy?

Answer: EPA (Environmental Protection Agency)

30. This sign of the zodiac follows Libra. Which sign is representative of people born between October 23rd and November 21st?

Answer: Scorpio

31. **Math Computation:** Find all values of x between 0 and 360 degrees, such that: $\sin x = -\sqrt{3}/2$ [sine of x equals negative radical 3 over 2].

Answer: (x=) 240, 300

32. The first line of this young adult novel is "It was almost December, and Jonas was beginning to be frightened." What is the title of this novel by Lois Lowry?

Answer: The Giver

33. This body cavity is comprised of the thoracic, abdominal, and pelvic cavities. What term is used by doctors to refer to these cavities that are towards the front of the body?

Answer: Ventral

**OSSAA 2022-2023
REGIONAL GAME 4
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

34. This former Communist and editor of Time Magazine accused Alger Hiss of being a Communist in the 1930s. Which man did Alger Hiss sue for libel before his own trial for perjury?

Answer: Whittaker Chambers

35. The first image from this object was released in July 2022 and showed galaxy cluster SMACS 0723. Name this telescope sitting 1.5 million miles behind Earth in its solar orbit.

Answer: James Webb Space Telescope

36. This Renaissance artist's father, Giovanni Santi, headed a studio in Athens. Which artist painted *The School of Athens*?

Answer: Raphael (Raffaello Sanzio da Urbino)

37. **Math Computation:** A right triangle has sides of 16 and 30 inches. What is the length of the hypotenuse in inches?

Answer: 34

38. This American is the only playwright to have won four Pulitzer Prizes. Which playwright's only comedy was *Ah! Wilderness*?

Answer: Eugene O'Neill

39. In August 2022, this woman was fatally injured when her Mini Cooper crashed into a Los Angeles home. Name this actress who starred in the films *Six Days, Seven Nights*, *Donnie Brasco*, and *Volcano*.

Answer: Anne Heche

40. This code of behavior, practiced in medieval Europe, stressed ideals such as courage, loyalty, and devotion. What is the name for this code of behavior for knights?

Answer: Chivalry

**OSSAA 2022-2023
REGIONAL GAME 4
FOURTH QUARTER
60 SECOND QUESTIONS**

LITERATURE - FICTIONAL CHARACTERS

Directions: Given the name of a literary character, name the author who created that character.

- | | |
|------------------------|-----------------------------------------------|
| 1. Daisy Buchanan | F. Scott <u>Fitzgerald</u> |
| 2. Cheshire Cat | Lewis <u>Carroll</u> (Charles Dodgson) |
| 3. Roger Chillingworth | Nathaniel <u>Hawthorne</u> |
| 4. Tess Durbeyfield | Thomas <u>Hardy</u> |
| 5. Ichabod Crane | Washington <u>Irving</u> |
| 6. Robinson Crusoe | Daniel <u>Defoe</u> |
| 7. Eeyore | A. A. <u>Milne</u> |
| 8. Phileas Fogg | Jules <u>Verne</u> |
| 9. Victor Frankenstein | Mary <u>Shelley</u> |
| 10. Dorian Gray | Oscar <u>Wilde</u> |

EXTRA:

- | | |
|---------------|--------------------------------------|
| 1. Heathcliff | <u>Emily Bronte</u> |
| 2. Dr. Jekyll | Robert Louis <u>Stevenson</u> |

**OSSAA 2022-2023
REGIONAL GAME 4
FOURTH QUARTER
60 SECOND QUESTIONS**

STATISTICS CALCULATIONS - MEAN/MEDIAN/MODE

Directions: For each of the following sets of data, find the mean, median, or mode as stated.

- | | | |
|-----|-------------------------------------------|----------------|
| 1. | Mean of 12, 18, 30, and 40 | 25 |
| 2. | Median of 9, 12, 15, 16, and 8 | 12 |
| 3. | Mode of 10, 10, 20, 20, 20, and 30 | 20 |
| 4. | Mean of 9, 11, 12, 15, and 18 | 13 |
| 5. | Median of 100, 300, 150, 200, 80, and 180 | 165 |
| 6. | Mode of 8, 4, 5, 5, 7, 7, 8, 8, and 5 | 5 and 8 |
| 7. | Mean of 200, 250, 350, and 500 | 325 |
| 8. | Median of 245, 312, 378, and 450 | 345 |
| 9. | Mode of 12, 15, 9, 3, 17, and 21 | None |
| 10. | Mean of 6, 7, 8, 12, 13, 14 | 10 |

EXTRA:

- | | | |
|----|----------------------------------|------------|
| 1. | Median of 350, 450, 760, and 994 | 605 |
| 2. | Mean of 25, 31, 37, 43 and 54 | 38 |

**OSSAA 2022-2023
REGIONAL GAME 4
FOURTH QUARTER
60 SECOND QUESTIONS**

OKLAHOMA HISTORY - UNIQUE PLACES IN OKLAHOMA

Directions: From the information given, identify the following concerning places of historical significance in Oklahoma.

- | | | |
|-----|-----------------------------------------------------------------------|-------------------------------|
| 1. | Obelisks for this network of roads still exist in Stroud and Langston | <u>Ozark Trail</u> |
| 2. | Fort that is birthplace of Army combat aviation | <u>Fort Sill</u> |
| 3. | National Landmark ranch outside Ponca City | <u>101 Miller Bros. Ranch</u> |
| 4. | The Field of Empty Chairs can be seen in this city | <u>Oklahoma City</u> |
| 5. | City known as the "Pipeline Crossroads of the World" | <u>Cushing</u> |
| 6. | Archaeological site referred to as "King Tut of the Arkansas Valley" | <u>Spiro Mounds</u> |
| 7. | Site of Custer's attack on Cheyenne led by Chief Black Kettle | <u>Washita Battlefied</u> |
| 8. | Name of only antebellum mansion still standing in Oklahoma | <u>Hunter's Home</u> |
| 9. | First army post located in Indian Territory | <u>Fort Gibson</u> |
| 10. | World War II Submarine located in Muskogee | <u>USS Batfish</u> |

EXTRA:

- | | | |
|----|-----------------------------------------------------|-------------------|
| 1. | Only HBCU in Oklahoma | <u>Langston</u> |
| 2. | Tribal seat of the Choctaw Nation from 1850 to 1863 | <u>Doaksville</u> |

OSSAA 2022-2023
REGIONAL GAME 4
EXTRA QUESTIONS

Extras:

Team One **Team Two**

- E1. This substance is what makes connective tissue different from other types of tissue in the human body. What is this network of macromolecules, minerals like collagen, and enzymes that provide structural support for the connective tissues it surrounds?

Answer: Extracellular matrix (or ECM)

- E2. This composer's sixth symphony is nicknamed the "Tragic" symphony. Which Austrian composer's fourth symphony is popularly called *Ode to Heavenly Joy*?

Answer: Gustav Mahler

- E3. **Math Computation:** Find both factors of the following quadratic expression: $x^2 + 4x - 45$ [x squared plus 4x minus 45].

Answer: (x - 5) and (x + 9) [either order]

- E4. Poems by this author include *The White Man's Burden* and *Gunga Din*. Which English author was born in India and set many of his stories there?

Answer: Rudyard Kipling

- E5. Originally, this player was given a 6-game suspension by an independent disciplinary officer, but the NFL appealed it. Name this current Cleveland Brown player accused of more than 20 counts of sexual misconduct while with the Houston Texans.

Answer: Deshawn Watson

- E6. The country of Georgia is located partly in this mountain range which forms a barrier between Asia and Europe. Which mountain range stretches between the Black Sea and the Caspian Sea?

Answer: Caucasus Mountains

- E7. **Math Computation:** What is the period, in terms of pi, of the following sinusoidal function? $y = -5 \sin(8x + 2\pi/3)$ [y equals negative 5 sine of the quantity 8x plus 2 pi over 3 end quantity].

Answer: 1/4 pi (or pi over 4)

OSSAA 2022-2023
REGIONAL GAME 4
EXTRA QUESTIONS

Team One Team Two

- E8. In order to create a bronze casting of a sculpture, one of these items must be made first. What structure is made by pouring plaster around an original work?

Answer: Mold

_____ _____

- E9. This is typically described by looking at average temperature and precipitation for a region. What is this term for the weather conditions over an area for a long period of time?

Answer: Climate

_____ _____

- E10. Published in 1929, *The Sound and the Fury* was the fourth novel of this American author. Which author also penned the novel *As I Lay Dying*?

Answer: William Faulkner

_____ _____

OSSAA 2022-2023
REGIONAL GAME 5
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

1. This city is home to Oklahoma's first and oldest public schoolhouse. In which city south of Guthrie can you visit the Territorial Schoolhouse, which opened in September 1889?

Answer: Edmond

2. **Math Computation:** The equation for finding the displacement of an object is: $d = -8t^3 + 9t^2 + 11t - 15$ [d equals negative 8 t cubed plus 9 t squared plus 11t minus 15]. What is the equation for finding the acceleration of that object at any given time?

Answer: (a=) -48t + 18

3. Persons diagnosed with Celiac disease are unable to eat this protein. Which protein is found in wheat, rye, barley, and triticale?

Answer: Gluten

4. This method of electrical charge transfer requires a ground wire or similar conducting material. In which type of charge transfer does one charge a conductor by bringing it near another charged object and grounding the conductor?

Answer: Induction

5. According to an old proverb, this force favors the bold. Which force is a synonym for luck?

Answer: Fortune

6. This company announced the cancellation or delay of warehouse building nationwide in July 2022. Name this e-commerce company that is the second-largest private employer in the United States.

Answer: Amazon

7. In this type of government, the power lies in the hands of a hereditary ruling class or nobility. Which type of government is exemplified by Great Britain's House of Lords?

Answer: Aristocracy

**OSSAA 2022-2023
REGIONAL GAME 5
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

8. **Math Computation:** Identify all the rational factors of the polynomial:
 $x^4 - 16$.

Answer: **(x + 2) (x - 2) (x² + 4) {any order}**

_____ _____

9. This hand is the highest a player can have in a game of poker. What is the name for a hand that includes all the face cards in the same suit?

Answer: **Royal flush**

_____ _____

10. In this type of fatty acid, all carbon atoms but one are bonded to two hydrogen atoms, making the molecule linear in nature. What is this term for these fats that are solid at room temperature, like butter, lard, and grease from meat?

Answer: **Saturated**

_____ _____

11. Anna Sewell wrote this book, her only novel, when she was 59. What is the title of this classic book about a horse?

Answer: **Black Beauty**

_____ _____

12. An investigative report by the Texas House of Representatives found a series of failures by law enforcement during a shooting in this city. In which town did the report reveal failures by law enforcement, the school police chief, and the school's security measures?

Answer: **Uvalde**

_____ _____

13. These 19th century sailing ships had three masts, square sails, and originated in America in the 1850s. What type of ships cut the time from the Atlantic to Pacific coast in half, facilitating faster movement of freight and supplies?

Answer: **Clipper ships**

_____ _____

14. **Math Computation:** Solve the following equation for x: $(4 + x)^2 = 36$ [the quantity 4 plus x end quantity squared equals 36].

Answer: **(x=) 2 and -10 {must have both but may be in either order}**

_____ _____

OSSAA 2022-2023
REGIONAL GAME 5
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

15. *The Naked Maja* is a painting by this Spanish artist. Which artist also created the nine tapestry cartoons of hunting scenes for the dining room at San Lorenzo del Escorial?

Answer: Francisco Goya

16. A complete cycle of this change lasts about 26,000 years according to astronomers. What is the term for this change in the direction of Earth's axis over time?

Answer: Precession

17. This comedy by the Greek playwright Aristophanes is set in Cloud-cuckoo-land. Which comedy was produced in 414 BCE and is seen as a political satire on Athens' attempt to conquer Syracuse the year before?

Answer: The Birds

18. This former NBA player passed away on July 31, 2022, at the age of 88. Name this former Celtic center who NBA Commissioner Adam Silver called "the greatest champion in all of team sports."

Answer: Bill Russell

19. During the French Revolution, this committee was established to identify "enemies of the state." Which committee was formed by the National Convention in 1793, with members serving for just one month?

Answer: Committee of Public Safety

20. **Math Computation:** What is the mean of the following set of test scores: 240, 360, 400, and 600?

Answer: 400

**OSSAA 2022-2023
REGIONAL GAME 5
SECOND QUARTER
60 SECOND QUESTIONS**

SCIENCE - ELEMENTAL WORDS

Directions: Use the chemical symbols for each of the following elements in the order they are given to spell out a common English word.

- | | |
|-------------------------------------------|---------------|
| 1. Oxygen, neon | One |
| 2. Hydrogen, oxygen, selenium | Hose |
| 3. Lithium, oxygen, nitrogen, sulfur | Lions |
| 4. Rhenium, indium | Rein |
| 5. Carbon, argon, sulfur | Cars |
| 6. Hydrogen, astatine, einsteinium | Hates |
| 7. Sulfur, phosphorus, argon, potassium | Spark |
| 8. Francium, americium, erbium | Framer |
| 9. Carbon, lanthanum, nitrogen, potassium | Clank |
| 10. Bromine, uranium, iodine, selenium | Bruise |

EXTRA:

- | | |
|---------------------------------------|---------------|
| 1. polonium, rhenium | Pore |
| 2. Bromine, oxygen, potassium, erbium | Broker |

**OSSAA 2022-2023
REGIONAL GAME 5
SECOND QUARTER
60 SECOND QUESTIONS**

POETRY - FILL IN THE BLANK

Directions: Given a famous line of poetry with a missing word, fill in the blank.

- | | | |
|-----|-------------------------------------------------------------------|----------|
| 1. | BLANK is the cruelest month | April |
| 2. | Give me your tired, your poor, your BLANK masses | Huddled |
| 3. | She walks in BLANK, like the night | Beauty |
| 4. | There is a place where the BLANK ends | Sidewalk |
| 5. | Look on my works, ye BLANK, and despair | Mighty |
| 6. | We wear the mask that grins and BLANK | Lies |
| 7. | In the morning, glad I see, my foe outstretched beneath the BLANK | Tree |
| 8. | I placed a BLANK in Tennessee | Jar |
| 9. | O Captain! My Captain! Our BLANK trip is done | Fearful |
| 10. | The only word there spoken was the whispered word BLANK | Lenore |

EXTRA:

- | | | |
|----|-------------------------------------------------------|-----------|
| 1. | Stop all the clocks, cut off the BLANK | Telephone |
| 2. | Hope is the thing with BLANK that perches in the soul | Fog |

OSSAA 2022-2023
REGIONAL GAME 5
SECOND QUARTER
60 SECOND QUESTIONS

FINE ARTS - SIGNIFICANT PEOPLE IN PAINTINGS

Directions: Given a painting and an author, identify the number of people depicted in the painting.

- | | | |
|-----|-------------------------------------------------------|----|
| 1. | <i>American Gothic</i> , Grant Wood | 2 |
| 2. | <i>The Birth of Venus</i> - Sandro Botticelli | 3 |
| 3. | <i>The Gross Clinic</i> - Thomas Eakins | 7 |
| 4. | <i>The Blue Boy</i> , Thomas Gainsborough | 1 |
| 5. | <i>The Last Supper</i> , Leonardo da Vinci | 12 |
| 6. | <i>Susanna and the Elders</i> , Artemisia Gentileschi | 3 |
| 7. | <i>The Arnolfini Wedding</i> , Jan Van Eyck | 2 |
| 8. | <i>Las Meninas</i> , Diego Velazquez | 9 |
| 9. | <i>Olympia</i> , Edouard Manet | 2 |
| 10. | <i>The Gleaners</i> , Jean-Francois Millet | 3 |

EXTRA:

- | | | |
|----|---------------------------------------------------------|---|
| 1. | <i>The Card Players</i> , Paul Cezanne | 2 |
| 2. | <i>Napoleon Crossing the Alps</i> , Jacques Louis David | 1 |

OSSAA 2022-2023
REGIONAL GAME 5
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

21. In the 1950s, *Mambo Italiano* was a big hit song for this female singer. Which singer's famous nephew stars in the movie *Ticket to Paradise* with Julia Roberts?

Answer: Rosemary Clooney

22. In 1807, this chemist discovered that chlorine and iodine were elements. Name this British chemist and inventor who used electricity to isolate the elements potassium, sodium, calcium, and others, creating the field of electrochemistry.

Answer: Humphrey Davy

23. This title character kills an albatross and curses the entire crew of his ship. Which character is the narrator of a long poem by Samuel Taylor Coleridge?

Answer: Ancient Mariner

24. In August 2022, the HBO Max app crashed when thousands of fans tried to watch the premiere of this television series at the same time. What is this series that serves as a prequel to the *Game of Thrones* series?

Answer: House of the Dragon

25. This Caribbean island nation has had a communist government for over 50 years. Which nation was formerly governed by elected officials, the last being Fulgencio Batista?

Answer: Cuba

26. **Math Computation:** Solve the following trigonometric equation for x. $\csc x + 2 = 0$ [cosecant of x plus 2 equals zero]. Express your answer in degrees between 0 and 360, giving all values of x that satisfy the equation.

Answer: (x=) 210, 330

27. Architect Pierre Cuypers designed this museum that houses Jan Vermeer's painting *The Kitchen Maid*. Which museum in Amsterdam is also home to Rembrandt's *The Night Watch*?

Answer: Rijksmuseum

OSSAA 2022-2023
REGIONAL GAME 5
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

28. This term is used for a scientist who studies the natural behavior patterns of animals. Konrad Lorenz, who theorizes that humans lack specific innate patterns that reduce aggression in other animals, is considered which type of scientist?

Answer: Ethologist

29. This writing term refers to the final wrap up of an essay. What is this term for the part of the essay that gives the audience the takeaway information?

Answer: Conclusion

30. In June 2022, this Scottish leader called for a referendum on potential independence from the United Kingdom. Name this Scottish First Minister who argued that Scotland would be better off economically outside the UK.

Answer: Nicola Sturgeon

31. This state is home to the second wild horse sanctuary to be opened in the United States, which was dedicated in 1990. In which state can you see the Prairie National Wild Horse Refuge, housed on the Hughes and Brent ranches?

Answer: Oklahoma

32. **Math Computation:** Points A, B, and C lie on circle D, such that point B is on the interior of major arc AC. If arcs AB and BC are 66 and 96 degrees, what is the measure of inscribed angle ABC in degrees?

Answer: 99

33. A festival is held in Gilroy, California every year to celebrate the edible bulb of this pungent plant. Which plant is associated in folklore with vampires?

Answer: Garlic

OSSAA 2022-2023
REGIONAL GAME 5
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

34. This type of loose connective tissue is more widely distributed in the human body than any other type of connective tissue. Name this loose, cobwebby tissue that wraps and protects the organs it surrounds.

Answer: Areolar

35. Blue Monday, known as the most depressing day of the year, falls in this month. Which month is named for the Roman god of doorways?

Answer: January

36. This man won the gold medal in the light heavyweight division at the 1960 Summer Olympics in Rome. Name this boxer who participated in “The Fight of the Century”, “The Thrilla in Manilla”, and “The Rumble in the Jungle”.

Answer: Muhammad Ali (or Cassius Clay)

37. This crime is defined as a major theft of money placed in one's trust or belonging to one's employer. What is the term for this type of crime that is separate from larceny?

Answer: Embezzlement

38. **Math Computation:** Lorna works at the pet store and gets an employee discount of 20%. What will be the price, including tax, on an aquarium that usually costs \$120, if the tax at this location is 11%?

Answer: \$106.56

39. In 1924, this humorist published *The Illiterate Digest*. Which humorist from Oklahoma said, "I tell you folks, all politics is applesauce?"

Answer: Will Rogers

40. Names given to this type of wind include the Chinooks of the Rockies, the Chetco Effect of Oregon, and the Zonda winds of Argentina. What name, starting with an “F”, is given to these dry, warm, down-slope winds that form on the leeward side of mountain ranges?

Answer: Fohn [fohn or fayn]

**OSSAA 2022-2023
REGIONAL GAME 5
FOURTH QUARTER
60 SECOND QUESTIONS**

GOVERNMENT - REPRESENTATIVES OF THE US HOUSE

Directions: Identify the state for which each of the following people are currently serving as U.S. Representative as of July 2022.

- | | | |
|-----|--------------------------|-------------------|
| 1. | Nancy Pelosi | California |
| 2. | Stephanie Bice | Oklahoma |
| 3. | Marjorie Taylor Greene | Georgia |
| 4. | Lauren Boebert | Colorado |
| 5. | Matt Gaetz | Florida |
| 6. | Rashida Tlaib | Michigan |
| 7. | Liz Cheney | Wyoming |
| 8. | Alexandria Ocasio-Cortez | New York |
| 9. | Jamie Raskin | Maryland |
| 10. | Dan Crenshaw | Texas |

EXTRA:

- | | | |
|----|---------------|-------------------|
| 1. | Steve Scalise | Louisiana |
| 2. | Maxine Waters | California |

**OSSAA 2022-2023
REGIONAL GAME 5
FOURTH QUARTER
60 SECOND QUESTIONS**

CALCULUS - DERIVATIVES

Directions: Find the first derivative of each of the following expressions.

- | | | |
|-----|------------------------------------------------------|----------------------------------------------------|
| 1. | $15x^5 - 9x^2$ [15 x to the fifth minus 9 x squared] | $75x^4 - 18x$ |
| 2. | $8x^3 - 13x$ [8 x cubed minus 13 x] | $24x^2 - 13$ |
| 3. | $9x^5 + 7x^4$ | $45x^4 + 28x^3$ |
| 4. | $4x^6 - 17x^2$ | $24x^5 - 34x$ |
| 5. | $12x^4 - 11x^2$ | $48x^3 - 22x$ |
| 6. | $25x^6 - 14x^3$ | $150x^5 - 42x^2$ |
| 7. | $\tan x$ [tangent x] | $\sec^2 x$ [secant squared x] |
| 8. | $e^{2x} - \ln x$ [e to the 2x power minus L N x] | $2e^{2x} - 1/x$ |
| 9. | $\sin(x^2)$ [sine of x squared] | $2x \cos(x^2)$ [2 x cosine x squared] |
| 10. | $\sec^2 x$ [secant squared x] | $2 \sec^2 x \tan x$ [2 secant squared x tangent x] |

EXTRA:

- | | | |
|----|-----------------------------|------------------------------------------------|
| 1. | $17x^7 + 9x^8$ | $119x^6 + 72x^7$ |
| 2. | $\cot 3x$ [cotangent of 3x] | $-3\csc^2 3x$ [negative 3 cosecant squared 3x] |

**OSSAA 2022-2023
REGIONAL GAME 5
FOURTH QUARTER
60 SECOND QUESTIONS**

U.S. HISTORY - BIRTHPLACES OF U.S. PRESIDENTS

Directions: Given a president of the U.S., name the state in which he was born.

- | | |
|-------------------------|-----------------------|
| 1. James K. Polk | North Carolina |
| 2. Joseph Biden | Pennsylvania |
| 3. Dwight D. Eisenhower | Texas |
| 4. Calvin Coolidge | Vermont |
| 5. John F. Kennedy | Massachusetts |
| 6. Theodore Roosevelt | New York |
| 7. Ulysses S. Grant | Ohio |
| 8. Woodrow Wilson | Virginia |
| 9. Lyndon B. Johnson | Texas |
| 10. Donald Trump | New York |

EXTRA:

- | | |
|---------------------|----------------------|
| 1. George H.W. Bush | Massachusetts |
| 2. Herbert Hoover | Iowa |

OSSAA 2022-2023
REGIONAL GAME 5
EXTRA QUESTIONS

Extras:

Team One **Team Two**

- E1. A one-line summary of this book could read "Marooned and unsupervised, schoolboys divide up and wage war." What is the title of this 1954 novel by William Golding?

Answer: Lord of the Flies

- E2. This inventor and engineer is responsible for the handheld calculator and the thermal printer and was awarded a Nobel Prize in Physics in 2000. Name this engineer for Texas Instruments credited with being the inventor of the integrated circuit.

Answer: Jack Kilby

- E3. The Jamestown settlement in Virginia was established in this year. In which year was Jamestown built, just 13 years before the arrival of the Mayflower in Massachusetts?

Answer: 1607

- E4. In July 2022, a sinkhole more than 100 feet in diameter developed in this country. Name this country where the 600 foot deep sinkhole formed near copper mines in Tierra Amarilla in the Atacama region.

Answer: Chile

- E5. The artist Jean Arp was a member of this artistic school. Which school also included Hugo Ball, Max Ernst, and Marcel Duchamp?

Answer: Dada

- E6. **Science computation:** Multiply the following two numbers and express your answer in scientific notation with the correct number of significant digits:
260 times 16

Answer: 4.2×10^3 [4.2 times ten to the third (power)]

- E7. The 1881 play, *Ghosts*, was written by this Norwegian playwright. Which playwright is considered the father of modern drama?

Answer: Henrik Ibsen

OSSAA 2022-2023
REGIONAL GAME 5
EXTRA QUESTIONS

Team One Team Two

- E8. A lawsuit filed in July 2022, claims that this candy is unfit for human consumption. Which candy made by the Mars candy company uses Titanium dioxide for color, even though some studies have shown that it can trigger DNA damage and cause cancer?

Answer: **Skittles**

- E9. This series of meetings began in 1814 and involved European leaders seeking to establish long-lasting peace and safety after the defeat of Napoleon. What was the name for these meetings which resulted in the reorganization of Europe?

Answer: **Congress of Vienna**

- E10. This scientific prefix is symbolized by a lower-case n. What is this prefix that means 10 to the negative ninth power?

Answer: **Nano-**

OSSAA 2022-2023
AREA GAME 1
FIRST QUARTER
TOSS UP QUESTIONS

- | | Team One | Team Two |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1. | This author was a civil rights activist and leader of the Niagara Movement. Which author promoted the <i>Encyclopedia Africana</i> and published a collection of essays titled <i>The Souls of Black Folk</i> ? _____ | |
| | Answer: <u>W. E. B. Dubois</u> _____ | |
| 2. | These blocks of information are stored on a user's computer by a website to track browsing history and save information for later use. What is the name for these small blocks placed on your computer when you access a website? _____ | |
| | Answer: <u>Cookie(s)</u> _____ | |
| 3. | In 1944, General Eisenhower sent a report to his troops warning of this alliterative condition caused by prolonged exposure to combat. What two-word name was given to this psychiatric condition that occurs after about 200 days in combat? _____ | |
| | Answer: <u>Shell Shock</u> _____ | |
| 4. | Science Computation: What orbital shell is filled after filling the 2p orbital? Remember to use the Madelung or diagonal rule of the Aufbau principle. _____ | |
| | Answer: <u>3s</u> _____ | |
| 5. | This art term refers to a painting which shows traces of a previous work. What is this 10-letter term beginning with P, the Italian word for repentance, indicating an artist has painted over an earlier work to alter it or replace it? _____ | |
| | Answer: <u>Pentimento</u> _____ | |
| 6. | In September 2022, this hurricane struck Puerto Rico and the eastern Caribbean before veering out to sea then back in to strike eastern Canada. Which hurricane became the strongest to ever strike Canada, with 110 mph winds and waves as high as 90 feet tall? _____ | |
| | Answer: <u>Hurricane Fiona</u> _____ | |
| 7. | This Andrew Lloyd Webber musical features a romance between a train engine named Rusty and a train car named Pearl. In which musical do the actors perform on roller skates? _____ | |
| | Answer: <u>Starlight Express</u> _____ | |

**OSSAA 2022-2023
AREA GAME 1
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

8. **Math Computation:** What is the exact value of the cosecant of 3 pi over 4 radians?

Answer: $\sqrt{2}$ [radical (square root of) 2]

9. This German businessman is credited with saving over 1200 Jews during the Holocaust. Which member of the Nazi party, who ran an enamel-works factory in Poland, was the subject of an award-winning film by Stephen Spielberg?

Answer: Oskar Schindler

10. This scientist hypothesized that the precession changes in the orientation of the Earth's tilt can lead to climate change over thousands of years. Which Serbian geophysicist and astronomer advanced his theory in the 1920s, in addition to founding planetary climatology on the other planets in the solar system?

Answer: Milutin Milankovic

11. In 1967, this godfather of the 1950s folk revival movement died of Huntington's chorea, a genetic disease. Which native of Okemah, Oklahoma brought his music to the masses with his album *Dust Bowl Ballads*?

Answer: Woody Guthrie

12. This film won the top award, the Golden Lion, at the 2022 Venice International Film Festival. Name this documentary directed by Laura Poitras about Nan Goldin and her efforts to hold Purdue Pharma and the Sackler family accountable for the opioid epidemic.

Answer: All the Beauty and the Bloodshed

13. This collection of 64 poems for children was written by Robert Louis Stevenson and published in 1885. Which collection contained the poems *My Bed is a Boat* and *My Shadow*?

Answer: A Child's Garden of Verses

**OSSAA 2022-2023
AREA GAME 1
FIRST QUARTER
TOSS UP QUESTIONS**

- | | Team One | Team Two |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| 14. Math Computation: What is the equation of the line through the point (14, -3) [14 comma -3] and perpendicular to the line with equation: $y = \frac{2}{3}x + 5$ [y equals two thirds x plus 5]? Put your answer in slope-intercept form. | _____ | _____ |
| Answer: <u>$y = -\frac{3}{2}x + 18$</u> [y equals negative 3 over 2 x plus 18] | | |
| 15. This river flows through the capital city of Slovenia. Which river is the subject of a famous piece of music composed in Bratislava in 1842 by Johann Strauss? | _____ | _____ |
| Answer: <u>Danube River</u> | | |
| 16. Some social scientists believe that watching violent television shows or playing violent video games causes this reduced emotional response to nearby violence. What term means being less likely to feel shock or distress at scenes of cruelty, violence, or suffering because of overexposure to such images? | _____ | _____ |
| Answer: Desensitize (desensitization) | | |
| 17. The Oklahoma City Museum of Art contains one of the world's largest collections of blown glass by this artist. Which glass artist was blinded in one eye in a car accident, making it difficult for him to do the glasswork himself? | _____ | _____ |
| Answer: <u>Dale Chihuly</u> | | |
| 18. This man was a three-time All-American running back for the University of Georgia and won the Heisman Trophy in 1982. Which running back later played for the Dallas Cowboys for four seasons before being part of the largest player trade in the history of the NFL? | _____ | _____ |
| Answer: <u>Herschel Walker</u> | | |
| 19. In a 5-paragraph essay, how many key ideas should appear in the thesis statement? | _____ | _____ |
| Answer: 3 | | |
| 20. This man has the most-subscribed individual channel on YouTube. Name this American YouTuber whose videos center on bizarre stunts like watching paint dry and trying to spin a fidget spinner for an entire day. | _____ | _____ |
| Answer: <u>MrBeast (or Jimmy Donaldson)</u> | | |

**OSSAA 2022-2023
AREA GAME 1
SECOND QUARTER
60 SECOND QUESTIONS**

ENTERTAINMENT - MOVIE TITLES WITH COLORS

Directions: Given an actor or actress who starred in it, fill in the blank in the title of each of the following movies with the name of a color.

- | | | |
|-----|-----------------------------------------------|---------------|
| 1. | Will Smith, Men in BLANK | Black |
| 2. | Kal Penn, Harold and Kumar Go to BLANK Castle | White |
| 3. | Tom Hanks, The BLANK Mile | Green |
| 4. | Malcolm McDowell, A Clockwork BLANK | Orange |
| 5. | Anthony Hopkins, BLANK Dragon | Red |
| 6. | Peter Sellers, The BLANK Panther | Pink |
| 7. | Whoopi Goldberg, The Color BLANK | Purple |
| 8. | Natalie Portman, BLANK Swan | Black |
| 9. | James Whitmore, Where the BLANK Fern Grows | Red |
| 10. | Chow Yun-fat, Curse of the BLANK Flower | Golden |

EXTRA:

- | | | |
|----|-----------------------------------|--------------|
| 1. | Josh Hartnett, BLANK Hawk Down | Black |
| 2. | Kathy Bates, Fried BLANK Tomatoes | Green |

**OSSAA 2022-2023
AREA GAME 1
SECOND QUARTER
60 SECOND QUESTIONS**

LITERATURE - COLORFUL BOOK TITLES

Directions: Given an author and a partial book title missing a colorful word, fill in the blank.

- | | |
|----------------------------------------------------------------|----------------|
| 1. Stendahl- The BLANK and the Black | Red |
| 2. Fannie Flagg- Fried BLANK Tomatoes at the Whistle Stop Cafe | Green |
| 3. Chimamanda Adichie- Half of a BLANK Sun | Yellow |
| 4. Crockett Johnson- Harold and the BLANK Crayon | Purple |
| 5. Piper Kerman- BLANK is the New Black | Orange |
| 6. Philip Pullman- The BLANK Compass | Golden |
| 7. John Steinbeck- The BLANK Pony | Red |
| 8. Baroness Orczy- The BLANK Pimpernel | Scarlet |
| 9. C. S. Lewis- The BLANK Chair | Silver |
| 10. Janet Fitch- BLANK Oleander | White |

EXTRA:

- | | |
|------------------------------------|---------------|
| 1. Toni Morrison- The BLANK Eye | Bluest |
| 2. James Ellroy - The BLANK Dahlia | Black |

**OSSAA 2022-2023
AREA GAME 1
SECOND QUARTER
60 SECOND QUESTIONS**

SCIENCE - BIOLOGY ABCs

Directions: Identify each of the following terms found in a typical biology class from the given clue. The answers will be alphabetical beginning with A.

- | | |
|-------------------------------------------------------------------------------|--------------------------------|
| 1. Basic building blocks of proteins | Amino Acids |
| 2. Single celled prokaryotic organism | Bacteria (or bacterium) |
| 3. Relation between 2 organisms where one benefits and the other isn't harmed | Commensalism |
| 4. Period during which a plant doesn't grow | Dormancy (or dormant) |
| 5. Proteins that control a chemical reaction | Enzymes |
| 6. Classification between order and genus | Family |
| 7. Change in gene frequency in population due to random chance | Genetic drift |
| 8. X-linked genetic disease associated with abnormal blood clotting | Hemophilia |
| 9. Hormone that regulates the sugar level in the blood | Insulin |
| 10. Organism that hasn't reached adult form | Juvenile |

EXTRA:

- | | |
|------------------------------------------------------------------|----------------|
| 1. Fibrous structure found in hair, hooves, feathers, and scales | Keratin |
| 2. Algae and fungi forming a mutualistic relationship | Lichen |

**OSSAA 2022-2023
AREA GAME 1
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

21. Ralph Ellison, the first African American to win the National Book Award, grew up in this district in Oklahoma City. What is the alliterative name for the district which was renowned for its nightlife and jazz and blues music during the jazz era?

Answer: Deep Deuce

22. Examples of prokaryotes with this shape include salmonella and listeria. What name is given to this bacteria shape that looks like a cylinder?

Answer: Bacilli (or rod)

23. According to the USDA's guide to internal temperatures for cooked food, what is the minimum safe temperature for any poultry in degrees Fahrenheit?

Answer: 165 degrees

24. In September 2022, the mayor of this metropolis declared a public emergency over migrants bused in from Arizona and Texas. In which city did Mayor Muriel Bowser create a new Office of Migrant Services to handle the influx of migrants sent by the governors of Arizona and Texas?

Answer: Washington, D.C.

25. This three-letter suffix used to form nouns means the act, state, or theory of. Which suffix can be added to commune or plagiarize to form a noun?

Answer: -ism

26. **Math Computation:** What is the surface area, in terms of square feet, of a sphere that has a radius of 7 feet? Put your answer in terms of pi.

Answer: 196 pi

27. On October 3, 1917, the U.S. Congress passed this act increasing income taxes to raise more money for the war effort. Which act raised the rates for a taxpayer making \$40,000 to 16%, while a taxpayer making \$1.5 million paid 67%?

Answer: War Revenue Act

**OSSAA 2022-2023
AREA GAME 1
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

28. Rather ironically, hippopotomonstrosesquippedaliophobia is a fear of these. What is this fear indicated by the number of letters in the name of the phobia itself?

Answer: Fear of long words

29. The trial of this serial killer was the first trial to be televised nationally in the U.S. Which serial killer was responsible for the deaths of over 30 women across 6 states, including Washington and Florida?

Answer: Ted Bundy

30. In 2022, this man was attacked and stabbed multiple times while on stage preparing for an interview at the Chautauqua Institute. Which noted British-American writer has been targeted for assassination since 1989 for the writing of his book, *The Satanic Verses*.

Answer: Salman Rushdie

31. The heresy trial of this man was based on the publication of his work titled *Dialogues Concerning the Two Chief World Systems*. Which man was labeled a heretic for his support of heliocentrism?

Answer: Galileo Galilei

32. **Math Computation:** If $f(x) = 2x^2 - 7$ [F of x equals 2 x squared minus 7] and $g(x) = 5x - 4$ [G of x equals 5x minus 4], what is $f(g(2))$ [F of G of 2]?

Answer: 65

33. In 1861, this man graduated from the U.S. Military Academy at West Point at the bottom of his class. Which man was buried there with full military honors in 1877 after he was killed in a famous battle in Montana the year before?

Answer: George Armstrong Custer

**OSSAA 2022-2023
AREA GAME 1
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

34. **Science computation:** What is the focal length of a lens if an object 10 centimeters in front of a converging lens produces a real image 15 centimeters behind the lens? Express your answer with the correct number of significant digits.

Answer: 6

35. This Flemish painter of the Baroque era was known for his Counter-Reformation altar pieces. Which painter created the triptych titled *The Elevation of the Cross* for the Cathedral of our Lady in Antwerp?

Answer: Peter Paul Rubens

36. In September 2022, this man hit his 700th Major League Baseball homerun. Name this St. Louis Cardinal player who also has the second-most RBIs and total bases in MLB history.

Answer: Albert Pujols

37. This play was written by J.K. Rowling, Jack Thorne, and John Tiffany. What is the title of this play featuring Harry Potter's son?

Answer: (Harry Potter and) the Cursed Child

38. **Math Computation:** What is the sample standard deviation in a normally distributed range of data, if the sample variance is 1681?

Answer: 41

39. The Vandals captured this African city in the 5th century and made it their capital. Which city fought the Punic Wars with Rome?

Answer: Carthage

40. Doctors use this term for the soft spots on a baby's skull where the bones have not yet fused together. What is this term starting with an "F"?

Answer: Fontanelle

**OSSAA 2022-2023
AREA GAME 1
FOURTH QUARTER
60 SECOND QUESTIONS**

U. S. GEOGRAPHY - STATE CAPITALS

Directions: Given the nickname of a U.S. state, name its capital city.

- | | | |
|-----|-------------------|--------------------|
| 1. | The Last Frontier | Juneau |
| 2. | Centennial State | Denver |
| 3. | Prairie State | Springfield |
| 4. | Pine Tree State | Augusta |
| 5. | Bay State | Boston |
| 6. | Magnolia State | Jackson |
| 7. | Granite State | Concord |
| 8. | Empire State | Buffalo |
| 9. | Ocean State | Providence |
| 10. | North Star State | St. Paul |

EXTRA:

- | | | |
|----|---------------|-----------------------|
| 1. | Sooner State | Oklahoma City |
| 2. | Show Me State | Jefferson City |

**OSSAA 2022-2023
AREA GAME 1
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH - LINES FROM POINT AND SLOPE

Directions: You will be given the slope and a point on a line, your job will be to find the equation of the line in slope-intercept or y-intercept form. {moderator – read (2,-3) as two comma negative three}

- | | | |
|-----|-------------------------------------|--------------------------|
| 1. | (6,3), slope negative 2 | $y = -2x + 15$ |
| 2. | (3,-2), slope 5 | $y = 5x - 17$ |
| 3. | (9,4), slope one third | $y = \frac{1}{3}x + 1$ |
| 4. | (-6,7), slope one half | $y = \frac{1}{2}x + 10$ |
| 5. | (-5,-4), slope negative 3 | $y = -3x - 19$ |
| 6. | (-12,8), slope two thirds | $y = \frac{2}{3}x + 16$ |
| 7. | (14,5), slope 3 | $y = 3x - 37$ |
| 8. | (6,-2), slope four thirds | $y = \frac{4}{3}x - 10$ |
| 9. | (-9,13), slope negative 6 | $y = -6x - 41$ |
| 10. | (18,-4), slope negative five halves | $y = -\frac{5}{2}x + 41$ |

EXTRA:

1. (-3,11), slope negative one third $y = -\frac{1}{3}x + 10$

2. (7,15), slope negative 8 $y = -8x + 71$

**OSSAA 2022-2023
AREA GAME 1
FOURTH QUARTER
60 SECOND QUESTIONS**

FINE ARTS - ARTISTS AND NATIONALITIES

Directions: Given the name of a famous painter, name that painter's country of origin.

- | | | |
|-----|---------------------|----------------------|
| 1. | Thomas Gainsborough | England |
| 2. | Johannes Vermeer | Netherlands |
| 3. | Pablo Picasso | Spain |
| 4. | Jackson Pollock | United States |
| 5. | Paul Cézanne | France |
| 6. | Diego Velazquez | Spain |
| 7. | Gustav Klimt | Austria |
| 8. | Wassily Kandinsky | Russia |
| 9. | Paul Klee | Germany |
| 10. | Titian | Italy |

EXTRA:

- | | | |
|----|----------------|---------------|
| 1. | Marcel Duchamp | France |
| 2. | Claude Monet | France |

OSSAA 2022-2023
AREA GAME 1
EXTRA QUESTIONS

Extra:

- E1. This musical instrument is the smallest member of the flute family. Which instrument is also the highest-pitched instrument in a symphony?

Answer: Piccolo

Team One **Team Two**

- E2. **Math Computation:** Convert the percent 19.25 percent into a fraction in lowest terms.

Answer: 77/400

- E3. The Spoon River Anthology consists of poetic epitaphs from a small town cemetery. Who is the American author of this poetry collection?

Answer: Edgar Lee Masters

- E4. This singer was born Anna Mae Bullock in Brownsville, Tennessee in 1939. Name this “Queen of Rock ‘n’ Roll” whose *Private Dancer* album includes the song “What’s Love Got to Do with It.”

Answer: Tina Turner

- E5. The country of Georgia is partially located in this mountain range. Which range stretches between the Black Sea and the Caspian Sea at the intersection of Asia and Europe?

Answer: Caucasus Mountains

- E6. **Chemistry Computation:** What is the pH [P H] of a solution that has a concentration of hydronium of 1.00×10^{-7} [1 point zero zero times ten to the negative seventh power]?

Answer: 7

- E7. The Empire State Building in New York City is an example of this style of architecture. Which style was prominent during the early 20th century?

Answer: Art Deco

OSSAA 2022-2023
AREA GAME 1
EXTRA QUESTIONS

Team One Team Two

- E8. **Math Computation:** Expand $(x + 1)^5$ [the quantity x plus 1 end quantity to the fifth power]. You may use Pascal's triangle to expand this expression.

Answer: $x^5 + 5x^4 + 10x^3 + 10x^2 + 5x + 1$

_____ _____

- E9. In Greek tragedy, a tragic flaw is known by this term. What is this 8-letter term beginning with H?

Answer: Hamartia

_____ _____

- E10. In eukaryotic cells, this part of the cytoskeleton creates a framework for which ribosomes and enzymes can be restricted to specific regions of the cell. Which part of the cytoskeleton is stronger than the microfilaments and anchors organelles and the cell-matrix junctions used in cellular communication?

Answer: Intermediate filaments

_____ _____

**OSSAA 2022-2023
AREA GAME 2
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

1. **Math Computation:** Solve the following equation for D:
 $(11D - 5) / 4 = 12$ [the quantity 11D minus 5 end quantity over 4 equals 12].

Answer: (D=) 53/11 (or 4&9/11)

_____ _____

2. The land run of September 16, 1893 opened up this sixty mile-wide piece of land for settlement. Which area caused a conflict between Kansas and the Cherokee Nation after the Kansas-Nebraska Act?

Answer: Cherokee Strip {do not accept Cherokee Outlet}

_____ _____

3. Also called a maidenhair tree, it is the only surviving species of a family of trees from 200 million years ago. Name this tall deciduous tree with fan-shaped leaves growing from the end of long shoots and plump seeds with a solid, nut-like center.

Answer: Ginko (or ginko biloba)

_____ _____

4. When making ceviche [suh-vee-chay], raw fish is prepared by soaking in this type of liquid. Which type of liquid provides a type of cooking through the chemical process of denaturing the fish?

Answer: Citrus juice

_____ _____

5. In September 2022, ten people perished on a float plane that crashed into this body of water. Into which body of water did the plane crash as it traveled from Friday Harbor in the San Juan Islands to Renton, a suburb of Seattle?

Answer: Puget Sound

_____ _____

6. This 7-letter word is a synonym for a chest of drawers or a government agency. Which word appears in the name of the agency established after the Civil war to help freed slaves?

Answer: Bureau

_____ _____

7. **Math Computation:** The line $y = \sqrt{2}$ is rotated around the x-axis from zero to two. What is the volume of this resulting figure in cubic units and in terms of pi?

Answer: 4π

_____ _____

**OSSAA 2022-2023
AREA GAME 2
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

8. In one of his majority opinions, this man ruled that slaves were not considered citizens under the U.S. Constitution. Which man succeeded John Marshall as the chief justice of the Supreme Court and presided over the Dred Scott case?

Answer: Roger Taney

_____ _____

9. These depressions form in the oceans where one tectonic plate subducts below another, and they are often beset by earthquakes. What is the term for these extremely deep, long, narrow depressions, of which the Mariana is the deepest on Earth.

Answer: Trench

_____ _____

10. 1600 Pennsylvania Avenue is the address of the White House, and this address in Britain is the residence of the British Prime Minister. What is the address of the home and office which has served as the prime minister's residence since 1735?

Answer: 10 Downing Street

_____ _____

11. This actor hosted the 74th Primetime Emmy Awards in September 2022. Name this actor who has been part of the Saturday Night Live cast since 2003.

Answer: Kenan Thompson

_____ _____

12. In 1992, this artist unveiled a 40-foot-tall flower-covered topiary of a West Highland Terrier, which is on permanent display at the Guggenheim Bilbao. Which artist released 3000 original editions of a vase version of this work he titled *Puppy*?

Answer: Jeff Koons

_____ _____

13. **Math Computation:** Convert into a binary number, the base ten number 135.

Answer: 10000111 [one zero zero zero zero one one one]

_____ _____

**OSSAA 2022-2023
AREA GAME 2
FIRST QUARTER
TOSS UP QUESTIONS**

- | | Team One | Team Two |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 14. | This Dutchman was the third director of New Netherland. Which man used beads worth about 22 dollars to purchase the island of Manhattan? | |
| | Answer: Peter <u>Minuit</u> | |
| 15. | This “g” term is used by medical professionals to identify the fibrous joint between a tooth and the socket in which it sits. What is the name for this periodontal ligament that allows for movement over time via braces or other devices but normally holds the tooth in a precise location? | |
| | Answer: Gomphosis | |
| 16. | Two decades before Michelangelo painted the Sistine Chapel ceiling, this artist was commissioned to decorate the walls of the chapel. Which artist created paintings depicting events in the life of Moses, the temptation of Christ and the punishment of the sons of Korah? | |
| | Answer: Sandro <u>Botticelli</u> | |
| 17. | In September 2022, an executive with this organization was accused of stealing \$10 million in donations. For which organization was Shalomyah Bowers supposed to collect donations and account for expenditures but siphoned the money into his firm’s accounts instead? | |
| | Answer: Black Lives Matter | |
| 18. | According to theater tradition, saying the name of this play in a theater is bad luck. Which Shakespeare play is set in Scotland? | |
| | Answer: Macbeth | |
| 19. | Math Computation: Find the midpoint of the segment with endpoints at (21, -33) [21 comma negative 33] and (49, 17) [49 comma 17]. | |
| | Answer: (35, -8) | |
| 20. | This 1887 document was signed at gunpoint and stripped the native population of much of their rights to govern themselves. What was the nickname given to this constitution forced on King Kalakaua of Hawaii? | |
| | Answer: <u>Bayonet Constitution</u> | |

**OSSAA 2022-2023
AREA GAME 2
SECOND QUARTER
60 SECOND QUESTIONS**

POTPURRI - PEOPLE NAMED MAGGIE, MARGARET, OR MEGAN

Directions: Identify the first and last names of each of the following people named Maggie, Margaret, or Megan.

- | | |
|---------------------------------------------------------------------------|----------------------------|
| 1. The “Iron Lady” who served as UK Prime Minister in the 1980s | Margaret Thatcher |
| 2. Released her second studio album, <i>Traumazine</i> , in 2022 | Megan Thee Stallion |
| 3. Author of <i>The Handmaid’s Tale</i> | Margaret Atwood |
| 4. Midfielder for the U.S Women’s national team | Megan Rapinoe |
| 5. Founded organization which became Planned Parenthood | Margaret Sanger |
| 6. Author of <i>Gone With the Wind</i> | Margaret Mitchell |
| 7. Starred as Professor McGonagall in the <i>Harry Potter</i> series | Maggie Smith |
| 8. Starred as Mikaela Barnes in <i>Transformers</i> | Megan Fox |
| 9. Actress from the movies <i>White House Down</i> and <i>Crazy Heart</i> | Maggie Gyllenhaal |
| 10. Stand-up comedian who starred in the Hulu film <i>Fire Island</i> | Margaret Cho |

EXTRA:

- | | |
|-------------------------------------------------------------------------------------------------------|-----------------------|
| 1. Actress from <i>When Harry Met Sally</i> , <i>Sleepless in Seattle</i> , and <i>City of Angels</i> | Meg Ryan |
| 2. Pop singer of “Lips Are Movin” and “Like I’m Gonna Lose You” | Meghan Trainor |

**OSSAA 2022-2023
AREA GAME 2
SECOND QUARTER
60 SECOND QUESTIONS**

MUSIC - A BAND MENAGERIE

Directions: Given two songs a band recorded, identify these bands that have an animal in their name.

- | | |
|-------------------------------------------------------------|--------------------------------|
| 1. <i>Shambala</i> and <i>Joy to the World</i> | Three Dog Night |
| 2. <i>Steppin' Stone</i> and <i>I'm a Believer</i> | The Monkees |
| 3. <i>Life in the Fast Lane</i> and <i>Hotel California</i> | The Eagles |
| 4. <i>Let Her Cry</i> and <i>Only Wanna Be With You</i> | Hootie and the Blowfish |
| 5. <i>Here I go Again</i> and <i>Give Me All Your Love</i> | Whitesnake |
| 6. <i>Mr. Jones</i> and <i>Accidentally in Love</i> | Counting Crows |
| 7. <i>In-A-Gadda-Da-Vida</i> and <i>Easy Rider</i> | Iron Butterfly |
| 8. <i>Mr. Tambourine Man</i> and <i>Turn! Turn! Turn!</i> | The Byrds |
| 9. <i>Tuff Enuff</i> and <i>Scratch My Back</i> | Fabulous Thunderbirds |
| 10. <i>Born to Be Wild</i> and <i>Magic Carpet Ride</i> | Steppenwolf |

EXTRA:

- | | |
|-------------------------------------------------|--------------------------|
| 1. <i>Antmusic</i> and <i>Stand and Deliver</i> | Adam and the Ants |
| 2. <i>The Reaper</i> and <i>Burnin' For You</i> | Blue Oyster Cult |

**OSSAA 2022-2023
AREA GAME 2
SECOND QUARTER
60 SECOND QUESTIONS**

CURRENT EVENTS - 2022 BET WINNERS

Directions: Name the person or group who won each of the following awards given out at the 2022 BET Awards show in June. You will be given the category name and a clue about the winner.

1. Best New Artist, singer of “Big Energy” **Latto**
2. Best male Hip Hop Artist, album *Mr. Morale & The Big Steppers* **Kendrick Lamar**
3. Best male R&B/Pop Artist, singer of “Take My Breath” **The Weeknd**
4. Best female Hip Hop Artist, singer of “Girls in the Hood” **Megan Thee Stallion**
5. BET Her Award for “Good Morning Gorgeous” **Mary J. Blige**
6. Best Collaboration from “Essence” **Wizkid feat. Justin Bieber & Tems**
7. Dr. Bobby Jones Best Gospel/Inspirational Award for “We Win” **Lil Baby X Kirk Franklin**
8. Best Group, comprised of Bruno Mars and Anderson .Paak **Silk Sonic**
9. Best Movie, biographical film about the father of Venus and Serena Williams **King Richard**
10. Best Actress, from *Euphoria* and *Spider-Man: No Way Home* **Zendaya**

EXTRA:

1. Best Actor, portrayed Richard Williams from the movie *King Richard* **Will Smith**
2. Sportsman of the Year Award, Golden State Warrior player **Stephen Curry**

**OSSAA 2022-2023
AREA GAME 2
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

21. This term comes from the Latin for “equal night”. What is this astronomical term for a day in the year when Earth’s rotational axis is perpendicular to the line connecting the Earth and the Sun, giving the night and the day both 12 hours?

Answer: Equinox

22. In 1924, this blues singer released her first record, *Down Hearted Blues*, which sold nearly 900,000 copies. Which singer recorded with Louis Armstrong and starred in the 1929 film *St. Louis Blues*?

Answer: Bessie Smith

23. Protests erupted in Iran after this woman was detained by the morality police and died while in custody in September 2022. Name this woman who was arrested for not wearing a hijab and beaten by police before being taken to a police station where she died.

Answer: Mahsa Amini (or Jina Amini)

24. This English city is the former site of the Roman Portus Dubris and is famous for its White Cliffs. Which city's shoreline is the subject of a famous poem by Matthew Arnold?

Answer: Dover

25. This law is used in probability to explain why the more an experiment is done the closer the experimental probability will be to the theoretical probability. Which law states that the relative frequency approaches the theoretical as the number of repetitions increases?

Answer: Law of Large Numbers

26. This country north of Venezuela has its capital at Port of Spain. Which republic is the southernmost island country in the Caribbean?

Answer: Trinidad and Tobago

**OSSAA 2022-2023
AREA GAME 2
THIRD QUARTER
TOSS UP QUESTIONS**

- | | | Team One | Team Two |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| 27. | Science Computation: A metal absorbs 6.0 joules of energy to raise 5.0 grams of the substance by 8.0 degrees Kelvin. What is the specific heat capacity of the metal, in joules per gram degree Kelvin? | _____ | _____ |
| | Answer: 0.15 | _____ | _____ |
| 28. | Alexandra Ripley is the author of the novel <i>Scarlett</i> , a sequel to this famous novel. Which novel was Margaret Mitchell's only published work? | _____ | _____ |
| | Answer: <u>Gone With the Wind</u> | _____ | _____ |
| 29. | This 2022 Little League team won 4 of their 6 Little League World Series games by run rule. Name this U.S. team that defeated Curacao in the championship game 13 to 3. | _____ | _____ |
| | Answer: Honolulu Hawaii {accept either part} | _____ | _____ |
| 30. | According to Wassily Kandinsky this art form is the most transcendent form of non-objective art. Which art form can be Classical, Romantic, or atonal? | _____ | _____ |
| | Answer: Music | _____ | _____ |
| 31. | Math Computation: What are the coordinates of the focus for the parabola with equation: $y = 1/4(x - 5)^2 + 8$ [y equals one fourth times the quantity x minus 5 end quantity squared plus 8]? Remember, the coordinates of the focus of a parabola are at: $(h, k + 1/(4a))$ [h comma k plus one over 4a]. | _____ | _____ |
| | Answer: (5, 9) | _____ | _____ |
| 32. | This American artist traveled to Fort Gibson in the 1830s and was the first artist to exhibit paintings of Native Americans from that region. Which artist published his work in his <i>North American Indian Portfolio</i> in 1844? | _____ | _____ |
| | Answer: <u>George Catlin</u> | _____ | _____ |
| 33. | This type of movement across the cell membrane in animal cells occurs with larger polar molecules and charged ions. What is the 2-word name for this movement through transfer proteins that needs no input energy? | _____ | _____ |
| | Answer: Facilitated diffusion | _____ | _____ |

OSSAA 2022-2023
AREA GAME 2
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

34. About 80% of all reported food poisoning is caused by this type of bacteria. Which bacteria causes about 75% of deaths from contaminated meat?

Answer: Salmonella

35. In an October post, GameRant declared that Echo in this 2022 game is an often overlooked character choice. In what game can Echo take on the identity of any of the other characters, including Pharah, Doomfist, Genji, or Tracer?

Answer: Overwatch 2

36. This adjective is the fifth word in the first line of Edgar Allan Poe's *The Raven*. Which adjective means dull, bleak, and lifeless?

Answer: Dreary

37. **Math Computation:** Angle theta is in quadrant one and the cosine of angle A equals 7 over 9. Find the cosine of 2A by using the double angle identity for cosine, $\cos 2A = 2 \cos^2 A - 1$ [cosine 2A equals 2 cosine squared A minus 1].

Answer: 17/81

38. This U.S. state was the first to ratify the Bill of Rights. Which state was awarded the right side of Ellis Island as the result of a lawsuit with neighboring New York in 1998?

Answer: New Jersey

39. This woman made her movie debut in the 1978 movie *Animal House* as Katy. Name this actress who went on to star as Marion Ravenwood in *Raiders of the Lost Ark* and Claire in *Scrooged*.

Answer: Karen Allen

40. Different from stocks, which held the feet or hands and feet of a criminal, this punishment device had holes for the hands and head of the person being subjected to public humiliation. What is the 7-letter name for this wooden punishment device?

Answer: Pillory

**OSSAA 2022-2023
AREA GAME 2
FOURTH QUARTER
60 SECOND QUESTIONS**

U.S. HISTORY - FAMOUS NATIVE AMERICANS

Directions: Given the name of a famous Native American, name the nation of which each was or is a member.

- | | | |
|-----|-----------------|-----------------------------------|
| 1. | Crazy Horse | Oglala Lakota <u>Sioux</u> |
| 2. | Will Rogers | Cherokee |
| 3. | Maria Tallchief | Osage |
| 4. | Cochise | Chiricahua <u>Apache</u> |
| 5. | Spencer Asah | Kiowa |
| 6. | Hiawatha | Onondaga (or Mohawk) |
| 7. | Joseph Brant | Mohawk |
| 8. | Manuelito | Navajo |
| 9. | Pawhuska | Osage |
| 10. | Jeri Redcorn | Caddo |

EXTRA:

- | | | |
|----|--------------|------------------|
| 1. | Black Kettle | Cheyenne |
| 2. | Samoset | Algonquin |

**OSSAA 2022-2023
AREA GAME 2
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH – TRIGONOMETRY RATIO BY QUADRANT

Directions: Given the quadrant the angle is in as well as one other trigonometric ratio for that angle, find the cosine of each of the following angles. If necessary, express your answer as a simplified radical.

- | | | |
|-----|-------------------------------------|---------------------------|
| 1. | Quadrant 1, sine x equals 5/13 | 12/13 |
| 2. | Quadrant 1, tangent x equals 4/3 | 3/5 |
| 3. | Quadrant 2, cosecant equals 25/7 | -24/25 |
| 4. | Quadrant 3, tangent equals 8/15 | -15/17 |
| 5. | Quadrant 4, sine equals -9/41 | 40/41 |
| 6. | Quadrant 3, cosecant equals -26/10 | -24/26 (or -12/13) |
| 7. | Quadrant 2, tangent equals -48/14 | -14/50 (or -7/25) |
| 8. | Quadrant 3, secant equals -29/20 | -20/29 |
| 9. | Quadrant 1, tangent equals 30/16 | 16/34 (or 8/17) |
| 10. | Quadrant 4, cotangent equals -80/18 | 80/82 (or 40/41) |

EXTRA:

- | | | |
|----|------------------------------------|---------------|
| 1. | Quadrant 4, sine equals -36/39 | 15/39 |
| 2. | Quadrant 3, cosecant equals -37/12 | -35/37 |

**OSSAA 2022-2023
AREA GAME 2
FOURTH QUARTER
60 SECOND QUESTIONS**

LITERATURE - CHARLES DICKENS NOVELS

Directions: Fill in the blank in the titles of the following novels by Charles Dickens.

- | | |
|--------------------------------|--------------------|
| 1. The BLANK Papers | Pickwick |
| 2. BLANK Nickelby | Nicholas |
| 3. The Old BLANK Shop | Curiosity |
| 4. Martin BLANK | Chuzzlewit |
| 5. Dombey and BLANK | Son |
| 6. David BLANK | Copperfield |
| 7. BLANK House | Bleak |
| 8. BLANK Tiimes | Hard |
| 9. Little BLANK | Dorrit |
| 10. The Mystery of BLANK Drood | Edwin |

EXTRA:

- | | |
|---------------------|---------------------|
| 1. Our BLANK Friend | Mutual |
| 2. Great BLANK | Expectations |

OSSAA 2022-2023
AREA GAME 2
EXTRA QUESTIONS

Extra:

- E1. **Science computation:** What is the total potential difference, in volts, flowing through a series circuit of 3 resistors if the voltages through the resistors are 12, 16, and 17 ohms?

Answer: 45

- E2. The Codex Leicester [Less-tur] is a 72-page journal written by this Renaissance man. Which man created this journal which Bill Gates bought for \$30.8 million dollars in 1994?

Answer: Leonardo da Vinci

- E3. **Math Computation:** What is the greatest common factor of 51, 85, and 102?

Answer: 17

- E4. Formed in 1938, this committee of the U.S. House of Representatives investigated Alger Hiss for espionage. Which committee was better known for its investigation of citizens and public employees for ties to communism?

Answer: House Un-American Activities Committee (accept HUAC)

- E5. Leeches and some insect larvae exhibit this type of locomotion. In which type of movement does part of the body arch forward and attach itself to the surface before the back part detaches from its location, moving toward the front where it reattaches to the surface and repeats?

Answer: Looping movement

- E6. This Mannerist artist created the painting *The Madonna of the Long Neck*. Who was this Italian artist of the High Renaissance whose first important work was the *Mystic Marriage of St. Catherine*?

Answer: Parmigianino (Girolamo Mazzola)

- E7. This team kicked off the 2022 NFL regular season with a 31-10 win over the LA Rams. Name this team coached by Sean McDermott and led by players Stefon Diggs and Josh Allen.

Answer: Buffalo Bills

Team One Team Two

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

OSSAA 2022-2023
AREA GAME 2
EXTRA QUESTIONS

Team One Team Two

- E8. Christopher Sergel wrote this play based on a book by Harper Lee. In which play, with the same name as the novel, does a boy named Dill Harris feature?

Answer: To Kill a Mockingbird

_____ _____

- E9. **Math Computation:** An isosceles right triangle has a hypotenuse of 32 inches. What is the area of the triangle in square inches?

Answer: 256

_____ _____

- E10. This British general served as the commander of the British army during the Napoleonic Wars and later served as prime minister of Great Britain. Which general defeated Napoleon at the Battle of Waterloo?

Answer: Duke of Wellington (Arthur Wellesley)

_____ _____

**OSSAA 2022-2023
AREA GAME 3
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

1. In 1971, Columbia Records marketed this man as the "New Dylan" and America's new "Street Poet." Which musician had his first ever Top 40 hit with the single "Born to Run?"

Answer: Bruce Springsteen

2. In October 2022, this woman was elected prime minister of Italy, becoming the first woman to hold that position. Name this far-right politician who promised to block migrant shjps and restore traditional family values.

Answer: Giorgia Meloni

3. At the age of 17, this poet wrote "The Negro Speaks of Rivers" on the back of an envelope. Which African American poet has become synonymous with the Harlem Renaissance?

Answer: Langston Hughes

4. This phase of the moon occurs a few days after the quarter moon. What is the two-word term for the time when the curve of the Moon is starting to grow from half to full?

Answer: Waxing gibbous

5. This dam has the highest generation capacity of any power plant in the U.S. Which dam is located on the Columbia River in Washington?

Answer: Grand Coulee Dam

6. In September 2022 the NFL announced that this singer would be the headliner for the 2023 Super Bowl Halftime show in Glendale, Arizona. Name this Barbadian singer who owns the Fenty Beauty line of products.

Answer: Rihanna (Robyn Rihanna Fenty)

7. The architectural style known as Brutalism is characterized by the large-scale use of this building material. Which material did the ancient Romans make using a mix of volcanic ash and aggregate?

Answer: Concrete

**OSSAA 2022-2023
AREA GAME 3
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

8. **Math Computation:** How many different permutations are possible if 3 people out of 10 are chosen for a committee?

Answer: 120

9. This sock pattern comes from a Scottish tradition of creating foot coverings from a clan's tartan. What is the name for these socks with a diamond-shaped pattern?

Answer: Argyle socks

10. **Science computation:** What is the total resistance, in ohms, flowing through a parallel circuit of 2 resistors if the resistances through them are each 12 ohms?

Answer: 6

11. This southern comfort food greatly resembles the German dish known as schnitzel. Which entree, featuring beef, was added to Oklahoma's official state meal list in 1998?

Answer: Chicken Fried Steak

12. In October 2022, Brett Favre returned \$600,000 that he received from a community education center in this state for promotional ads and appearances that he didn't do. In which state did the DHS give two non-profits more than \$94 million, including \$77 million spent on expensive cars, private schools, and pet projects for celebrities?

Answer: Mississippi

13. The first use of the canning principle of heating food in a sealed container occurred during these conflicts occurring between 1803 and 1815. What name was given to these European conflicts where preserved food in sealed glass jars helped ensure the troops could be fed in winter?

Answer: Napoleonic Wars

**OSSAA 2022-2023
AREA GAME 3
FIRST QUARTER
TOSS UP QUESTIONS**

- | | Team One | Team Two |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| 14. Math Computation: What is the degree of the following polynomial?
$3x^6z^2 - 19x^5yz^3$ [3 x to the sixth z squared minus 19 x to the fifth y z cubed]. | _____ | _____ |
| Answer: <u>9</u> | _____ | _____ |
| 15. Books by this author include <i>The Last Don</i> and <i>The Sicilian</i> . Which author rose to fame with his depiction of the Corleone family in <i>The Godfather</i> ? | _____ | _____ |
| Answer: <u>Mario Puzo</u> | _____ | _____ |
| 16. Most arachnids possess these in the slit organs of their cuticle, while crickets and grasshoppers have tympanic organs that serve as this type of sensory receptor. What name is given to these sensory receptors that respond to sound? | _____ | _____ |
| Answer: <u>Phonoreceptors</u> | _____ | _____ |
| 17. Congress established this agency in 1934 to regulate the radio, telephone, and telegraph industries. Which agency currently regulates interstate and international communications in all 50 states, the District of Columbia, and U.S. territories? | _____ | _____ |
| Answer: <u>Federal Communications Commission (accept FCC)</u> | _____ | _____ |
| 18. This oldest player in MLB history started his career with the Birmingham Black Barons in 1927 and ended it with the Cleveland Indians in 1948. Which right-handed pitcher was the first electee of the Negro League Committee to be enshrined in the Baseball Hall of Fame? | _____ | _____ |
| Answer: <u>Leroy (Satchell) Paige</u> | _____ | _____ |
| 19. In an internal combustion engine, a distributor sends current to these small parts necessary for ignition. Which small parts provide the catalyst for ignition to take place? | _____ | _____ |
| Answer: <u>Spark Plugs</u> | _____ | _____ |
| 20. This conic section has two slant radii and two foci. Which section has an equation in the form the quantity x minus h end quantity squared over a squared minus the quantity y minus k end quantity squared over b squared equals one? | _____ | _____ |
| Answer: <u>Hyperbola</u> | _____ | _____ |

**OSSAA 2022-2023
AREA GAME 3
SECOND QUARTER
60 SECOND QUESTIONS**

MUSIC - AND THE OSCAR GOES TO

Directions: Given a year and the title of a song that won an Oscar for Best Original Song in a movie, name the movie.

- | | | |
|-----|-----------------------------|----------------------------|
| 1. | 2002- Lose Yourself | 8 Mile |
| 2. | 2014- Glory | Selma |
| 3. | 2013- Let it Go | Frozen |
| 4. | 2018- Shallow | A Star is Born |
| 5. | 1997- My Heart Will Go On | Titanic |
| 6. | 1986- Take My Breath Away | Top Gun |
| 7. | 1965- Chim Chim Cher-ee | Mary Poppins |
| 8. | 1947- Zip-a-Dee-Doo-Dah | Song of the South |
| 9. | 2008- Jai Ho | Slumdog Millionaire |
| 10. | 1999- You'll Be in My Heart | Tarzan |

EXTRA:

- | | | |
|----|--------------------------|----------------------------|
| 1. | 1998- When You Believe | The Prince of Egypt |
| 2. | 1994- Colors of the Wind | Pocahontas |

**OSSAA 2022-2023
AREA GAME 3
SECOND QUARTER
60 SECOND QUESTIONS**

U. S. HISTORY - POTPOURRI

Directions: From the information given, identify the following from American history.

- | | |
|-------------------------------------------------------------------|------------------------------|
| 1. 1840s slogan referring to the Oregon Territory | <u>54-40 or fight</u> |
| 2. Mail service system of the 1850s | <u>Pony Express</u> |
| 3. First permanent Spanish settlement in Florida | <u>St. Augustine</u> |
| 4. Name of battle fought between Monitor and Merrimac | <u>Hampton Roads</u> |
| 5. Mexican general who captured the Alamo | <u>Santa Anna</u> |
| 6. Scientist in charge of developing atomic bomb | <u>Robert Oppenheimer</u> |
| 7. National park in both North Carolina and Tennessee | <u>Great Smoky Mountains</u> |
| 8. She was a superintendent of nurses and mother of the Red Cross | <u>Clara Barton</u> |
| 9. Vice president of the Confederacy during Civil War | <u>Alexander Stephens</u> |
| 10. Legendary fruit planter buried in Fort Wayne, Indiana | <u>Johnny Appleseed</u> |

EXTRA:

- | | |
|-------------------------------------------------------------|--------------------------------|
| 1. Man whose hippodrome became Madison Square Garden | <u>P.T. Barnum</u> |
| 2. Brothers who wrote first musical to win a Pulitzer Prize | <u>George and Ira Gershwin</u> |

**OSSAA 2022-2023
AREA GAME 3
SECOND QUARTER
60 SECOND QUESTIONS**

HUMANITIES - FAMOUS FIRST LINES FROM POETRY

Directions: Given the first line from a famous poem, name the author of the poem.

1. What happens to a dream deferred? **Langston Hughes**
2. Twas brillig and the slithy toves **Lewis Carroll**
3. Two roads diverged in a yellow wood **Robert Frost**
4. Sing, goddess, of Achilles ruinous anger **Homer**
5. In Xanadu did Kubla Khan **Samuel Taylor Coleridge**
6. She walks in beauty, like the night **George Gordon, Lord Byron**
7. Of man's first disobedience and the fruit **John Milton**
8. I will arise now and go to Innisfree **William Butler Yeats**
9. The curfew tolls the knell of parting day **Thomas Gray**
10. Stop all the clocks, cut off the telephone **W.H. Auden**

EXTRA:

1. Hail to thee, blithe Spirit **Percy Bysshe Shelley**
2. Tyger! Tyger! burning bright **William Blake**

**OSSAA 2022-2023
AREA GAME 3
THIRD QUARTER
TOSS UP QUESTIONS**

- | | | Team One | Team Two |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| 21. | During the Elizabethan era, this term referred to playgoers who stood around the stage during a performance. What is this word, beginning with G, for patrons who usually could not afford a seat in the theater's galleries? | _____ | _____ |
| | Answer: Groundlings | | |
| 22. | The inner nuclear membrane of a eukaryotic cell is covered by this mesh of intermediate filaments. What is this dense fibrous network inside the nucleus that provides strength to the nuclear membrane and anchors the nuclear pores in the nuclear envelope? | _____ | _____ |
| | Answer: Nuclear lamina | | |
| 23. | In 1930, the Chicago Tribune labeled this man the original "Public Enemy No. 1," the first man to be so designated in the United States. Which man did the newspaper describe as "the chief of gangland?" | _____ | _____ |
| | Answer: Al Capone | | |
| 24. | This song includes the lyrics: "Just a city boy, born and raised in South Detroit, he took the midnight train going anywhere." Name this iconic song from Journey that is their signature piece. | _____ | _____ |
| | Answer: "Don't Stop Believin'" | | |
| 25. | According to USA Today, this city ranks number one in 2022 for best street art. Which city's Plaza District is known for its street art murals? | _____ | _____ |
| | Answer: Oklahoma City | | |
| 26. | Math Computation: Simplify the following fraction by factoring the two trinomials: $(x^2 - 16) / (x^2 - 14x + 40)$ [the quantity x squared minus 16 end quantity over the quantity x squared minus 14x plus 40 end quantity]. | _____ | _____ |
| | Answer: $(x + 4) / (x - 10)$ [(the quantity) x plus 4 over (divided by) (the quantity) x minus 10] | | |
| 27. | Playwrights George Bernard Shaw and Oscar Wilde were both from this country. Which country is home to the famous Abbey Theater founded by W.B. Yeats in 1904? | _____ | _____ |
| | Answer: Ireland | | |

OSSAA 2022-2023
AREA GAME 3
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

28. In this type of interspecific competition, one species limits another's access to a resource in the environment. In which competition type does one species directly stop another from accessing a resource, such as a hummingbird chasing away other species of hummingbirds from a field of flowers?

Answer: Interference

29. With a net worth of \$203 billion, this man topped the 2022 Forbes list as the world's wealthiest person. Which man is the co-founder and CEO of Tesla?

Answer: Elon Musk

30. In the Fall of 2022, New York judge Raymond Dearie was named to preside in this role in the Department of Justice case against Donald Trump. In what role was Judge Dearie appointed to look through the classified records seized from the Mar-a-Lago residence of former President Trump?

Answer: Special master

31. In the Broadway musical *Mamma Mia!*, this song is the final song. Which Abba song references a famous historical defeat?

Answer: Waterloo

32. **Math Computation:** Two supplementary angles have measures of $(2x + 16)$ and $(3x + 14)$ degrees. What are the measures of the 2 angles in degrees?

Answer: 76, 104

33. Dylan Thomas's poem *Do Not Go Gentle Into That Goodnight* is an example of this poetic form. Which form, beginning with a V, features 19 lines divided into five tercets and one quatrain?

Answer: Villanelle

34. **Science Computation:** What is the full electron configuration for manganese? Recall that the atomic number of manganese is 25.

Answer: $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^5$ [1-s-2 2-s-2 2-p-6 3-s-2 3-p-6 4-s-2 3-d-5]

OSSAA 2022-2023
AREA GAME 3
THIRD QUARTER
TOSS UP QUESTIONS

- | | Team One | Team Two |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 35. | The Willamette [Wil-LAM-eht] Valley is this U. S. state's main agricultural region. Which northwest state is also home to Mount Hood? | |
| | Answer: Oregon | |
| 36. | This unranked Sun Belt team shocked number 6 Texas A&M in September 2022. Name this small school from Boone, North Carolina, whose nickname is the Mountaineers. | |
| | Answer: Appalachian State (or App State) | |
| 37. | The first collaboration for this husband-and-wife sculptural team was the 1981 work <i>Flashlight</i> , a huge outdoor sculpture at the University of Nevada, Las Vegas. Which team also created <i>Spoonbridge and Cherry</i> for the Minneapolis Sculpture Garden? | |
| | Answer: Claes <u>Oldenburg</u> and Coosje van Bruggen | |
| 38. | Math Computation: Find the limit as x approaches infinity of the function:
$f(x) = (65x^3 + 8x + 32) / (26x^3 + 3x - 16)$ [F of x equals the quantity 65 x cubed plus 8x plus 32 end quantity over the quantity 26x cubed plus 3x minus 16 end quantity]. | |
| | Answer: 5/2 (or 2&1/2 or 2.5) | |
| 39. | In a plot diagram, this part of the story falls between the climax and the resolution. What is the two-word term for events that take place after the drama has occurred? | |
| | Answer: Falling Action | |
| 40. | This bone is the most posterior bone of the cranium, laying at the back and base of the skull. In which bone of the head would you find the foramen magnum, the opening allowing the spinal cord to connect to the brain? | |
| | Answer: Occipital | |

**OSSAA 2022-2023
AREA GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

CURRENT EVENTS - EUROPEAN LEADERS

Directions: Identify the current leaders of each of the following European nations, as of November 1, 2022.

- | | |
|-----------------------------------------|---------------------------------------|
| 1. Prime Minister of the United Kingdom | Rishi <u>Sunak</u> |
| 2. President of France | Emmanuel <u>Macron</u> |
| 3. Chancellor of Germany | Olaf <u>Scholz</u> |
| 4. Prime Minister of Italy | Giorgia <u>Meloni</u> |
| 5. President of Ireland | Michael D. <u>Higgins</u> |
| 6. President of Poland | Andrzej <u>Duda</u> |
| 7. Prime Minister of Belgium | Alexander <u>Do Croo</u> |
| 8. President of the Netherlands | Mark <u>Rutte</u> |
| 9. President of Portugal | Marcelo Rebelo de <u>Sousa</u> |
| 10. Prime Minister of Greece | Kyriakos <u>Mitsotakis</u> |

EXTRA:

- | | |
|------------------------------|---------------------------------|
| 1. Prime Minister of Norway | Erna <u>Solberg</u> |
| 2. Prime Minister of Denmark | Matte <u>Frederiksen</u> |

**OSSAA 2022-2023
AREA GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH - CALCULUS SECOND DERIVATIVES

Directions: Find the second derivative of each of the following monomials, with respect to x.

- | | | |
|-----|--------------------------------|----------------------------------------------------------------------|
| 1. | $12x^2$ [12 x squared] | 24 |
| 2. | $6x^5$ [6 x to the fifth] | $120x^3$ |
| 3. | $13x^3$ [13 x cubed] | $78x$ |
| 4. | $4x^8$ [4 x to the eighth] | $224x^6$ |
| 5. | $14x^4$ [14 x to the fourth] | $168x^2$ |
| 6. | x^9 [x to the ninth] | $72x^7$ |
| 7. | $\cos x$ [cosine x] | $-\cos x$ [negative cosine x] |
| 8. | e^{4x} [e to the $4x$ power] | $16e^{4x}$ |
| 9. | $15x^6$ [15 x to the sixth] | $450x^4$ |
| 10. | $\tan x$ [tangent x] | $2 \sec^2 x \tan x$ [2 secant squared x tangent x] |

EXTRA:

- | | | |
|----|---------------------|-------------------------------|
| 1. | $-7x^{-3}$ | $-48x^{-5}$ |
| 2. | $x \ln x$ [x L N x] | $1/x$ |

OSSAA 2022-2023
AREA GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS

ZOOLOGY - INSECT ORDERS

Directions: Identify the scientific order to which each of the following kinds of insects is classified. Be sure to give the scientific name for each.

- | | |
|------------------------|--------------------|
| 1. Ants | Hymenoptera |
| 2. Fireflies | Coleoptera |
| 3. Crickets | Orthoptera |
| 4. Monarch butterflies | Lepidoptera |
| 5. Midges | Diptera |
| 6. Dragonflies | Odonata |
| 7. Earwigs | Dermoptera |
| 8. Bedbugs | Hemiptera |
| 9. Lacewings | Neuroptera |
| 10. Aphids | Homoptera |

EXTRA:

- | | |
|-----------------|-------------------|
| 1. Termites | Isoptera |
| 2. Chicken lice | Mallophaga |

OSSAA 2022-2023
AREA GAME 3
EXTRA QUESTIONS

Extras:

- E1. Each year, the annual Kolache Festival is held in this Oklahoma town founded on land that was once part of the Sac and Fox Reservation. Which Oklahoma town is known for its Czech heritage and named after the capital of the Czech Republic?

Answer: Prague

Team One Team Two

- E2. **Math Computation:** Company X has a market share of 15 points. If they produce 1800 units per year, what is the total number of units sold per year in this market?

Answer: 12000

- E3. This food process helps preserve liquids such as milk and wine by heating them. What is this process named after the Frenchman who developed it?

Answer: Pasteurization (accept Pasteurizing or Pasteurize)

- E4. In October 2022, this internet company updated its acceptable use policy to state that they would take \$2500 from your account with them if you shared misinformation. Name this online payment company that serves as a payment processor for online vendors and auction sites.

Answer: PayPal

- E5. This medical term refers to the process of sewing or stitching tissue back together. What is this word ending in -ing?

Answer: Suturing

- E6. Psychologists in this specific field include Jakob von Uexkull [ooks-kuhl], David Canter, and William Ittelson. Name this branch of psychology that is concerned with the relationship between human behavior and the world around them.

Answer: Environmental Psychology

- E7. This organization is the main investigative arm of the U.S. Justice Department. As of December 2022, which organization was led by Christopher Wray?

Answer: Federal Bureau of Investigation (or FBI)

OSSAA 2022-2023
AREA GAME 3
EXTRA QUESTIONS

Team One Team Two

- E8. **Math Computation:** Find the inverse function of the equation:
 $y = -\frac{2}{3}x - 24$ and express your answer in slope-intercept form.

Answer: **y = -3/2 x - 36**

- E9. According to the tales of Robin Hood, this man's first meeting with Robin resulted in the famous outlaw's fall into a brook. Which man became Robin's right hand man?

Answer: **Little John**

- E10. **Science Computation:** An atom of Darmstadtium has an atomic number of 110 and a mass number of 281. How many neutrons are present in one atom of Darmstadtium?

Answer: **171**

**OSSAA 2022-2023
AREA GAME 4
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

1. Use the Law of Syllogism to find the conclusion to the following statements:
If the cafeteria is serving hamburgers, then today is Friday. If today is Friday,
then there is a football game.

Answer: If the cafeteria is serving hamburgers, then there is a football game. _____

2. In Washington Irving's *The Legend of Sleepy Hollow*, this character dresses up as the headless horseman to frighten Ichabod Crane. Which alliterative character is Ichabod's main rival for Katrina Van Tassel?

Answer: Brom Bones _____

3. This psychologist believed that the collective unconscious contains archetypes manifested in dreams and exhibited in literature and the arts. Name this Swiss founder of analytical psychology and developer of concepts like the collective unconscious, the psychological complex, and synchronicity.

Answer: Carl Jung _____

4. At the 1964 World's Fair, Henry Ford debuted this car model, selling 400,000 in one year. Which car model, named for a World War II fighter plane, was marketed as "the working man's Thunderbird?"

Answer: Mustang _____

5. In September 2022, this U.S. governor flew two planes full of immigrants from his state to Martha's Vineyard. Which governor appropriated more than \$12 million to transport "illegal immigrants" across state lines?

Answer: Ron DeSantis _____

6. Thomas Gainsborough was most famous for this type of painting. Which type of painting are his works *The Blue Boy* and *Mrs. Siddons*?

Answer: Portrait _____

7. **Math Computation:** What is the indefinite integral of the function:
 $12x^3 + 16x - 8$ [12 x cubed plus 16x minus 8]?

Answer: $3x^4 + 8x^2 - 8x + c$ [3 x to the fourth plus 8 x squared minus 8x plus c] {must say + c} _____

OSSAA 2022-2023
AREA GAME 4
FIRST QUARTER
TOSS UP QUESTIONS

- | | | Team One | Team Two |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| 8. | In this type of silent film, you might see a devious man with a black handlebar mustache tying a woman to railroad tracks as a train is approaching. What name was given to these popular shows such as <i>The Perils of Pauline</i> ? | _____ | _____ |
| Answer: Melodrama | | | |
| 9. | In a spinning object, this is the product of the object's moment of inertia and the angular velocity about the axis. What is the rotational equivalent of multiplying mass times velocity? | _____ | _____ |
| Answer: <u>Angular momentum</u> {do not accept or prompt on “momentum”} | | | |
| 10. | By 1725, this empire stretched from the Baltic to the Pacific. Which empire annexed the Kamchatka Peninsula in the 1720s? | _____ | _____ |
| Answer: <u>Russian Empire</u> | | | |
| 11. | This couple announced their divorce via Instagram in late September 2022. Name this power couple, one a supermodel and the other a future Hall-of-Fame football player. | _____ | _____ |
| Answer: <u>Tom Brady and Gisele Bundchen</u> | | | |
| 12. | The prelude and first fugue in Bach's <i>The Well-Tempered Clavier</i> are written in this key. Which major key signature has no sharps or flats? | _____ | _____ |
| Answer: <u>C Major</u> | | | |
| 13. | Math Computation: Find all solutions for A in the following equation:
$A - 2 = 48/A$ [A minus 2 equals 48 over A]. | _____ | _____ |
| Answer: (A=) 8, -6 {must have both} | | | |
| 14. | This classification is used for all literature that is not poetry. What is this five-letter term? | _____ | _____ |
| Answer: <u>Prose</u> | | | |

**OSSAA 2022-2023
AREA GAME 4
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

15. Membrane bound vesicles transport proteins between the endoplasmic reticulum and this part of the cell. Identify this organelle of the eukaryotic cell that bundles proteins into vesicles inside the cell, including attaching sugars to proteins so they can be secreted from the cell.

Answer: Golgi apparatus (or Golgi complex or Golgi body) _____

16. Anyone who hikes the 170-mile Tahoe Rim Trail will pass through these two states. In which two states does the Tahoe Rim Trail wind through the Sierra Nevada Mountains?

Answer: Nevada and California _____

17. In 2022, this chess grandmaster was accused of cheating in tournaments when he couldn't explain moves he had made. Name this American player who defeated Magnus Carlsen in a tournament in St. Louis prior to Carlsen's surprise withdrawal.

Answer: Hans Niemann _____

18. This style of architecture got its start in the 1990s with CAD and software that created Binary Large Objects. Which style of architecture features curved and rounded buildings with shapes that resemble amoeba?

Answer: Blob Architecture (accept Blobitecture or Blobism) _____

19. **Math Computation:** Convert the binary number 10111 one zero one one one] into a base 10 number.

Answer: 23 _____

20. Words that begin with the root word gastr- refer to this body part. What body part is referenced in the word gastroenteritis?

Answer: Stomach _____

**OSSAA 2022-2023
AREA GAME 4
SECOND QUARTER
60 SECOND QUESTIONS**

MUSIC - MUSICAL DUETS

Directions: Given the year and the title of a song performed as a duet, name the duo who recorded it.
{moderator – either order is fine}

- | | | |
|-----|-------------------------------------|-----------------------------------------------------------|
| 1. | 1983- Islands in the Stream | Dolly <u>Parton</u> and Kenny <u>Rogers</u> |
| 2. | 1965- I Got You Babe | Sonny & Cher |
| 3. | 1982- The Girl is Mine | Michael <u>Jackson</u> and Paul <u>McCartney</u> |
| 4. | 1981- Stop Draggin' My Heart Around | Stevie <u>Nicks</u> and Tom <u>Petty</u> |
| 5. | 1978- You're the One That I Want | John <u>Travolta</u> and Olivia <u>Newton-John</u> |
| 6. | 2009- Empire State of Mind | Jay <u>Z</u> and Alicia <u>Keys</u> |
| 7. | 2022- Hold me Closer | Elton <u>John</u> and Britney <u>Spears</u> |
| 8. | 2022- Break My Soul | Madonna and Beyoncé |
| 9. | 2014- Anything Goes | Lady <u>Gaga</u> and Tony <u>Bennett</u> |
| 10. | 1981- Endless Love | Diana <u>Ross</u> and Lionel <u>Ritchie</u> |

EXTRA:

- | | | |
|----|-----------------------------------|-----------------------------------------------------|
| 1. | 1984- Easy Lover | Phil <u>Collins</u> and Philip <u>Bailey</u> |
| 2. | 1963- Girl From the North Country | Johnny <u>Cash</u> and Bob <u>Dylan</u> |

**OSSAA 2022-2023
AREA GAME 4
SECOND QUARTER
60 SECOND QUESTIONS**

CURRENT EVENTS - SPORTS CHAMPIONS OF 2022

Directions: Correctly identify each of the following sports champions of the 2022 calendar year.

- | | |
|------------------------------------------------------------|--------------------------------------------|
| 1. Super Bowl Champion | Los Angeles <u>Rams</u> |
| 2. College Football Playoff National Championship | University of <u>Georgia</u> |
| 3. NBA Champion | Golden State Warriors |
| 4. UEFA Champions League | <u>Real Madrid</u> |
| 5. Stanley Cup winner | Colorado <u>Avalanche</u> |
| 6. Men's Singles titles at Australian Open and French Open | Rafael <u>Nadal</u> |
| 7. Daytona 500 Winner | Austin <u>Cindric</u> |
| 8. NCAA Women's College Basketball Champion | University of <u>South Carolina</u> |
| 9. Men's Tour de France | Jonas <u>Vingegaard</u> |
| 10. Women's Singles titles at US Open and French Open | Iga <u>Swiatek</u> |

EXTRA:

- | | |
|-------------------------------------------|------------------------------------|
| 1. Master's golf Tournament | Scottie <u>Scheffler</u> |
| 2. NCAA Men's College Basketball Champion | University of <u>Kansas</u> |

**OSSAA 2022-2023
AREA GAME 4
SECOND QUARTER
60 SECOND QUESTIONS**

SCIENCE - INVENTORS

Directions: Identify the inventors of each of the following items or processes.

- | | |
|-----------------------|---------------------------------|
| 1. Bifocal lenses | Benjamin <u>Franklin</u> |
| 2. Motorcycle | Gottlieb <u>Daimler</u> |
| 3. Helicopter | Igor <u>Sikorsky</u> |
| 4. Revolver | Samuel <u>Colt</u> |
| 5. Arc lamp | Sir Humphrey <u>Davy</u> |
| 6. Barbed wire | Joseph <u>Glidden</u> |
| 7. Modern bicycle | James <u>Stanley</u> |
| 8. Condensed milk | Gail <u>Borden</u> |
| 9. Spinning jenny | James <u>Hargreaves</u> |
| 10. Power driven loom | Edmund <u>Cartwright</u> |

EXTRA:

- | | |
|--------------|-----------------------------|
| 1. Gyroscope | Leon <u>Foucault</u> |
| 2. Zipper | W. L. <u>Judson</u> |

OSSAA 2022-2023
AREA GAME 4
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

21. This man's design for an airship included a rigid aluminum framework surrounding individual internal gas cells, each capable of expanding and contracting, and an external engine and control gondola. Name this German who invented the rigid dirigible airship.

Answer: Ferdinand von Zeppelin

22. This Oklahoma town is home to the headquarters of the Chickasaw Nation. Which town is also the birthplace of country music star Blake Shelton?

Answer: Ada

23. This actress passed away in October 2022 at the age of 96. Name this woman with Tony Awards, Golden Globe Awards and nominations for Oscars, Emmys, and a Grammy who is perhaps best known for her role as Jessica Fletcher on *Murder, She Wrote*.

Answer: Angela Lansbury

24. In 1977, 59 people in Michigan died from this disease after eating improperly home-canned jalapenos. Which foodborne illness, particularly associated with improperly canned produce, causes tiredness and muscle paralysis?

Answer: Botulism

25. **Math Computation:** What is the exact value of the secant of 7 pi over 6 radians?

Answer: $-2\sqrt{3}/3$ [negative 2 radical (square root of) 3 over 3] (or $-2/3$ radical 3)

26. In grammar, this verbal is formed by adding the word to in front of a verb. What is the name for this verbal that functions as a noun, adjective or adverb in a sentence?

Answer: Infinitive

27. This term refers to the flat-topped remnants of a former seamount. Which feature results when the seamount begins to sink, and the waves erode the material to a submerged flat area?

Answer: Guyots [Gee-ohz]

OSSAA 2022-2023
AREA GAME 4
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

28. In parliamentary procedure, the presiding official opens a meeting with this action. What is the three-word phrase for the start of a meeting?

Answer: Call to order

29. In October 2022, this man returned to power in Brazil following the defeat of Jair Bolsonaro for the presidency. Name this man who previously served as Brazil's president from 2003 to 2010.

Answer: Luiz Inacio Lula da Silva

30. This Latin phrase has been the state motto of Virginia since 1776. Which Latin phrase did John Wilkes Booth say he shouted after shooting President Abraham Lincoln at Ford's Theater in 1865?

Answer: Sic semper tyrannis

31. This financial term refers to the earnings realized on an investment over a length of time and is expressed as a percentage of the original invested amount of money. What is this term beginning with a "Y"?

Answer: Yield

32. The Fords of Beruna, Deathwater Island, and the Cavern of Time are all places in this fictional land. Which land was created by author C.S. Lewis?

Answer: Narnia

33. **Science computation:** Examine the following chemical equation to find what the other product of the reaction is: $H_3AsO_3 + 3NaOH \rightarrow Na_3AsO_3 + \underline{\hspace{2cm}}$ [H 3 A S O 3 plus 3 N A O H forms N A 3 A S O 3 plus blank] {note these are the letter O not the number zero}.

Answer: 3 H₂O [3 H 2 O] (or 3 water molecules)

34. This mammal is the smallest in North America. Which tiny but fierce mammal is featured in the title of a comedy by William Shakespeare?

Answer: Pygmy Shrew

**OSSAA 2022-2023
AREA GAME 4
THIRD QUARTER
TOSS UP QUESTIONS**

- | | | Team One | Team Two |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| 35. | During the 2022 Primetime Emmy Awards this show won five awards. Name this HBO comedy/drama set at a resort in Sicily for season 2. | _____ | _____ |
| | Answer: The White Lotus | | |
| 36. | This plan, presented at the 1787 Constitutional Convention, proposed a unicameral legislature and was designed to favor small states. Which plan was proposed by William Paterson? | _____ | _____ |
| | Answer: <u>New Jersey Plan</u> | | |
| 37. | Math Computation: Factor completely the expression: $2x^3 - 2x$ [2 x cubed minus 2x]. | _____ | _____ |
| | Answer: $2x(x - 1)(x + 1)$ [2x times x minus 1 times x plus 1] {any order} | | |
| 38. | This painting is believed to be the visual representation of Albert Einstein's Theory of Relativity. What is the title of this surrealist work by Salvador Dali? | _____ | _____ |
| | Answer: <u>The Persistence of Memory</u> | | |
| 39. | In 2022, this man was fired after his Big 10 teams had compiled a 16 and 31 record over his 4 plus years as head coach. Name this former Nebraska quarterback who had a 10 win, 26 loss Big 10 record in his seasons as the Nebraska coach. | _____ | _____ |
| | Answer: Scott Frost | | |
| 40. | This man was the husband of Queen Victoria and was given the title of Prince Consort. Which German prince was elected Chancellor of Cambridge University in 1847? | _____ | _____ |
| | Answer: Prince <u>Albert</u> | | |

**OSSAA 2022-2023
AREA GAME 4
FOURTH QUARTER
60 SECOND QUESTIONS**

LITERATURE - PLAYS AND POEMS ON THE GREAT BOOKS PODCAST

Directions: Given the title of a play or poem featured on the Great Books podcast, name the author.

- | | |
|------------------------------------|------------------------------------------|
| 1. The Song of Hiawatha | Henry Wadsworth <u>Longfellow</u> |
| 2. The Merchant of Venice | William <u>Shakespeare</u> |
| 3. Dr. Faustus | Christopher <u>Marlowe</u> |
| 4. The Faerie Queene | Edmund <u>Spenser</u> |
| 5. Antigone | <u>Sophocles</u> |
| 6. Mother Courage and Her Children | Bertolt <u>Brecht</u> |
| 7. The Inferno | Dante <u>Alighieri</u> |
| 8. The Clouds | <u>Aristophanes</u> |
| 9. The Odyssey | Homer |
| 10. Agamemnon | <u>Aeschylus</u> |

EXTRA:

- | | |
|-------------------------|-----------------------------------|
| 1. Coriolanus | William <u>Shakespeare</u> |
| 2. The Canterbury Tales | Geoffrey <u>Chaucer</u> |

**OSSAA 2022-2023
AREA GAME 4
FOURTH QUARTER
60 SECOND QUESTIONS**

SCIENCE - NOBEL PRIZE WINNERS

Directions: Identify each of the following Nobel Prize winning scientists from a short clue.

- | | | |
|-----|------------------------------------------------------------------------|--------------------------------|
| 1. | Discoverer of the photoelectric effect | Albert Einstein |
| 2. | Classical conditioning with salivating dogs | Ivan Pavlov |
| 3. | His model of the atom had electrons in stable orbits about the nucleus | Neils Bohr |
| 4. | Discovery of the anthrax bacterium and cause of tuberculosis | Robert Koch |
| 5. | Discovered the evidence of radioactivity | Antoine Henri Becquerel |
| 6. | Creation of quantum mechanics through his uncertainty principle | Warner Heisenberg |
| 7. | Founded quantum chemistry and molecular biology | Linus Pauling |
| 8. | Determined the structure of the insulin molecule | Frederick Sanger |
| 9. | Proposed the octahedral configuration of transition metals | Alfred Werner |
| 10. | Isolated fluorine from its compounds | Henri Moissan |

EXTRA:

1. Along with Carl Bosch invented a process to synthesize ammonia from nitrogen and hydrogen gases **Fritz Habor**
 2. First Japanese Laureate and predictor of the pi meson **Hideki Yukawa**

**OSSAA 2022-2023
AREA GAME 4
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH - PROBABILITY WITH DICE

Directions: Given two fair standard dice, find the probability of each of the following rolls occurring. Make sure to reduce if possible.

1.	The sum is 9	1/9
2.	The sum is 6	5/36
3.	The sum is less than 4	1/12
4.	The sum is less than 7	5/12
5.	The sum is either 3 or 11	1/9
6.	The numbers multiply to get 12	1/9
7.	One is double the other	1/6
8.	Neither of them is greater than 5	4/9
9.	Only one of the dice is more than 4	4/9
10.	The sum is a multiple of 3	1/3

EXTRA:

1.	The sum is 8	5/36
2.	The two dice are both more than 3	1/4

OSSAA 2022-2023
AREA GAME 4
EXTRA QUESTIONS

Extras:

- E1. These rough projections of the temporal bones in the human cranium are full of air cavities. Name these projections that are close to the middle ear and provide an attachment site for the neck muscles.

Answer: Mastoid process

Team One Team Two

- E2. The hunting horn of the 17th century was a forerunner of this modern musical instrument. Which musical instrument features a funnel-shaped mouthpiece and a tube of over 20 feet coiled into a circular shape?

Answer: French horn

- E3. **Math Computation:** Carlie has 6 pairs of shoes, 3 pairs of jeans, 5 blouses, and 3 hats to pick from while on vacation. How many different outfits are possible?

Answer: 270

- E4. This contemporary of William Shakespeare wrote the poem *Come Live With Me and Be My Love*. Which author of poetry and plays was stabbed in a fight over a tavern bill in 1593?

Answer: Christopher Marlowe

- E5. In September 2022, this singer was ordered to a jury trial over possible copyright violations of a Marvin Gaye song. Which superstar was alleged to have used elements of Marvin Gaye's song "Let's Get It On" in his hit single "Thinking Out Loud".

Answer: Ed Sheeran

- E6. The southernmost point in the lower 48 U.S. states is this island. Which island did Ernest Hemingway make his home in the last years of his life?

Answer: Key West

- E7. **Math Computation:** What is the equation of the line through the point $(8, -12)$ [8 comma negative 12] and perpendicular to the line with equation: $y = 4x + 11$ [y equals 4x plus 11]? Put your answer in slope-intercept form.

Answer: $y = -\frac{1}{4}x - 10$ [y equals negative one fourth x minus 10]

**OSSAA 2022-2023
AREA GAME 4
EXTRA QUESTIONS**

Team One Team Two

- E8. This Renaissance sculptor's most famous work is a set of 10 bas-relief panels created for a baptistry in Florence. Which sculptor created the gilded bronze doors known as the *Gates of Paradise*?

Answer: Lorenzo Ghiberti

- E9. The Lotka-Volterra equation is one method of calculating the effects of interspecific competition on this measure. What is the Lotka-Volterra equation trying to find when it takes a derivative of the original number, along with factors like per-capita growth, carrying capacity, and species interaction rate?

Answer: Population

- E10. *Shooting an Elephant* is a short story by this British author. Which author is better known for works such as *1984* and *Animal Farm*?

Answer: George Orwell

**OSSAA 2022-2023
AREA GAME 5
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

1. Kenton, Oklahoma is the only town in Oklahoma to be in this time zone.
Which time zone is the closest to the western border of Oklahoma?

Answer: Mountain Standard Time

_____ _____

2. **Math Computation:** Use the distance formula to find the length of a segment with endpoints at (-11, 23) [negative 11 comma 23] and (-3, 8) [negative 3 comma 8].

Answer: 17

_____ _____

3. Although vanilla is also produced in Mexico and Tahiti, it is native to this island. Which island in the Indian Ocean handpicks vanilla beans that sell for more than \$20 an ounce?

Answer: Madagascar

_____ _____

4. This part of the epithalamus exists in some reptiles and is formed from outgrowths of the optic tectum in the midbrain to the top of the head. Which light-sensitive structure is covered by skin but is usually not visible on the surface of the skin?

Answer: Parietal eye (or third eye or median eye or pineal eye)

_____ _____

5. This adjective is used to indicate gems that have been produced in a laboratory. Which three-syllable adjective is generally used to describe something that imitates a natural product?

Answer: Synthetic

_____ _____

6. This WNBA team earned their first WNBA title in 2022. Name this team for which Chelsea Gray won the 2022 Finals MVP.

Answer: Las Vegas Aces

_____ _____

7. If you drive the getaway car for someone who commits an armed robbery, you can be charged as one of these people. What is the term for a person who aids another in the commission of a crime?

Answer: Accomplice

_____ _____

OSSAA 2022-2023
AREA GAME 5
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

8. **Math Computation:** What is the sample standard deviation among the data points: 1, 5, 8, 11, and 15? Remember, the standard deviation squared is equal to the summation of the square of the difference between each term and the mean, divided by one less than the number of terms. Leave your answer as a reduced radical.

Answer: $\sqrt{29}$ [radical (square root) 29]

9. In Norse mythology, this predominant group of Jotnar [yoat-nahr] live in Jotunheim [yoa-ten-hime]. What is the name for this group of large persons who are at war with the Norse gods?

Answer: Frost giants

10. **Science computation:** What is the total resistance, in ohms, flowing through a parallel circuit of 3 resistors if the resistances through them are 6, 8, and 24 ohms?

Answer: 3

11. This fictional character moored his boat on the back of a whale, escaped from an island by tying himself to a giant bird, and was enslaved by the Old Man of the Sea. Which character was the subject of stories told in *The One Thousand and One Nights*?

Answer: Sinbad the Sailor

12. The state of Alaska cancelled the harvest season of these creatures in 2022 when it was discovered there was a mass die-off of the organisms in the Bering Sea. Name these 10-legged crustaceans whose numbers have dropped by more than 80% since 2018 due to rising ocean temperatures.

Answer: Snow crabs

13. This American financier served as president of the Second Bank of the United States. Which man was a chief opponent of President Andrew Jackson, which resulted in the termination of the bank?

Answer: Nicholas Biddle

OSSAA 2022-2023
AREA GAME 5
FIRST QUARTER
TOSS UP QUESTIONS

- | | Team One | Team Two |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 14. | Math Computation: Solve the following equation to find G:
$8 + \sqrt{2G - 7} = 19$ [8 plus the square root of the quantity 2G minus 7 equals 19].

Answer: (G=) 64 _____ | |
| 15. | In the 1890s, this Impressionist painter created a series of paintings of Rouen Cathedral. Which painter created over 30 paintings of the facade of the cathedral as a study of the properties of ever-changing light?

Answer: Claude <u>Monet</u> _____ | |
| 16. | This volcano is the southernmost on Earth, with a lava lake in its inner summit crater. Name this volcano on Ross Island that has been active since 1.3 million years ago and is the most active in Antarctica.

Answer: Mount <u>Erebus</u> _____ | |
| 17. | Notable plays by this playwright include <i>The Piano Lesson</i> and <i>Fences</i> . These plays are part of a cycle about Black American life by which American author?

Answer: August <u>Wilson</u> _____ | |
| 18. | This album debuted at number one on the Billboard Albums Chart in September 2022, the first for an all-female group in more than ten years. Name this album by the K-pop quartet Blackpink.

Answer: Born Pink _____ | |
| 19. | England's first overseas colony was this island claimed by John Cabot in 1497. Which island is now a province in Canada?

Answer: Newfoundland _____ | |
| 20. | In November 2022, the US Supreme Court declined to block a grand jury subpoena of this U.S. senator. Name this senator who was subpoenaed by a Georgia grand jury investigating potential interference in the 2020 presidential election.

Answer: Lindsey <u>Graham</u> _____ | |

**OSSAA 2022-2023
AREA GAME 5
SECOND QUARTER
60 SECOND QUESTIONS**

LITERATURE - AMERICAN LITERATURE

Directions: Given the title of a work of American literature, name the author.

- | | | |
|-----|----------------------------|-------------------------------------|
| 1. | Twenty Years at Hull House | Jane <u>Addams</u> |
| 2. | A History of Standard Oil | Ida <u>Tarbell</u> |
| 3. | Little Women | Louisa May <u>Alcott</u> |
| 4. | Jaws | Peter <u>Benchley</u> |
| 5. | The Illustrated Man | Ray <u>Bradbury</u> |
| 6. | In Cold Blood | Truman <u>Capote</u> |
| 7. | The Last of the Mohicans | James Fenimore <u>Cooper</u> |
| 8. | As I Lay Dying | William <u>Faulkner</u> |
| 9. | This Side of Paradise | F. Scott <u>Fitzgerald</u> |
| 10. | Death in the Afternoon | Ernest <u>Hemingway</u> |

EXTRA:

- | | | |
|----|---------------------|-------------------------------|
| 1. | Profiles in Courage | John F. <u>Kennedy</u> |
| 2. | Lonesome Dove | Larry <u>McMurtry</u> |

**OSSAA 2022-2023
AREA GAME 5
SECOND QUARTER
60 SECOND QUESTIONS**

MATH - VOLUMES OF 3-D FIGURES

Directions: Find the volumes of each of the following simple 3-D figures in cubic units. Express your answers in terms of pi as needed.

- | | | |
|-----|----------------------------------------------------|---------------|
| 1. | Square prism, sides of 8 | 512 |
| 2. | Square prism, sides of 7 | 343 |
| 3. | Triangular prism, base of 6, 8, & 10, height of 3 | 72 |
| 4. | Triangular prism, base of 5, 12, & 13, height of 4 | 120 |
| 5. | Square pyramid, sides of 5, slant height of 12 | 100 |
| 6. | Square pyramid, sides of 8, slant height of 9 | 192 |
| 7. | Cylinder, radius of 5, height of 11 | 275 pi |
| 8. | Cylinder, radius of 6, height of 9 | 324 pi |
| 9. | Cone, radius of 9, height of 7 | 189 pi |
| 10. | Cone, radius of 7, height of 12 | 196 pi |

EXTRA:

- | | | |
|----|----------------------------------------------------------|------------|
| 1. | Rectangular prism, sides 7, 8, and 9 | 504 |
| 2. | Cube, with inside diagonals of $9\sqrt{3}$ [9 radical 3] | 729 |

**OSSAA 2022-2023
AREA GAME 5
SECOND QUARTER
60 SECOND QUESTIONS**

US HISTORY - STATUARY HALL

Directions: Given the name of a statue exhibited in Statuary Hall at the U.S. Capitol, name the state that person represents.

- | | | |
|-----|----------------------|----------------------|
| 1. | Ronald Reagan | California |
| 2. | Dwight D. Eisenhower | Kansas |
| 3. | Daniel Webster | New Hampshire |
| 4. | Will Rogers | Oklahoma |
| 5. | Huey Long | Louisiana |
| 6. | Sam Houston | Texas |
| 7. | Robert Fulton | Pennsylvania |
| 8. | Thomas Edison | Ohio |
| 9. | Jefferson Davis | Mississippi |
| 10. | Henry Clay | Kentucky |

EXTRA:

- | | | |
|----|--------------------|------------------|
| 1. | Thomas Hart Benton | Missouri |
| 2. | Jacques Marquette | Wisconsin |

OSSAA 2022-2023
AREA GAME 5
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

21. This 1990s trio's hit singles from their first album included *I Adore Mi Amor* and *Thinkin' Back*. Which group got their start in the choir at North Classen High School in Oklahoma City?

Answer: Color Me Badd

22. Called a boreal forest in North America, this is considered the largest land biome. Name this biome in which you would find pines, spruces, and larches south of the tundra in land that was covered by glaciers during the last ice age.

Answer: Taiga

23. Notable works by this British poet include *Queen Mab* and *A Defence of Poetry*. Which 19th century poet also wrote *Ode to the West Wind*?

Answer: Percy Bysshe Shelley

24. In October 2022, this group announced it would be cutting oil production by 2 million barrels of oil per day. Name this association of 13 countries that accounts for more than 40% of the annual global oil production and more than 80% of the world's oil reserves.

Answer: OPEC (Organization of the Petroleum Exporting Countries)

25. This triangular-shaped body of water adjacent to the Indian Ocean is the world's largest bay. Which bay is off the coast of India and Bangladesh?

Answer: Bay of Bengal

26. **Math Computation:** Bill's insurance has a deductible of \$1000 before his insurance will pay 80% of the remaining cost. If Bill's total hospital bill is \$3500, how much will he have to pay?

Answer: \$1500

27. The Temple of Edfu, built during the Ptolemaic period, is the largest temple dedicated to this Egyptian deity, the son of Osiris and Isis. What is the name of this deity often depicted with the head of a falcon?

Answer: Horus

OSSAA 2022-2023
AREA GAME 5
THIRD QUARTER
TOSS UP QUESTIONS

- | | Team One | Team Two |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 28. | This energy source consists of a nitrogenous base, ribose sugar, and a triple phosphate salt. Which energy source is sometimes called the “molecular unit of currency” because of all the cell processes it powers? | |
| | Answer: Adenosine triphosphate (or ATP) _____ | |
| 29. | This short story by James Thurber features a man who escapes into daydreams to get away from his nagging wife. What is the title of this story about a man who daydreams he is a hero who saves the day when no one else can? | |
| | Answer: The <u>Secret Life of Walter Mitty</u> _____ | |
| 30. | The president of this beauty pageant was suspended when allegations surfaced that the 2022 contest was rigged to help the contestant from Texas win. Which competition, headed by President Chrystle Stewart, is being investigated by the Miss Universe Organization? | |
| | Answer: Miss USA {do not accept Miss America} _____ | |
| 31. | This Oklahoma attraction is the only prehistoric Native American archaeological site in the state open to the public. What is this site that was once a vital cultural center of the Caddoan peoples? | |
| | Answer: <u>Spiro Mounds</u> _____ | |
| 32. | Math Computation: Evaluate if x equals negative 4: $x^3 - 3x^2 + 9$. | |
| | Answer: -103 _____ | |
| 33. | This fruit weighs in as the sweetest with a 55% content of 100% sugar. Which fruit was a staple in the diet of the ancient Egyptians, Romans, and Greeks and is the yummy filling in today's popular Newton cookies? | |
| | Answer: Fig _____ | |
| 34. | Chemistry Computation: What is the molecular formula for silver sulfide? | |
| | Answer: Ag_2S [A G 2 S] _____ | |

**OSSAA 2022-2023
AREA GAME 5
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

35. In English grammar, this verb form functions as a noun. What is the name for this verb form that typically ends in -ing?

Answer: Gerund

36. This man is the only player to lead the NCAA, the ABA, and the NBA in points per game in a season. Name this small forward who was an 8-time NBA and 4-time ABA All-Star and was noted for his underhanded free-throw shooting style.

Answer: Rick Barry

37. In 1854, this politician sponsored the Kansas-Nebraska Act, which included the idea of popular sovereignty. Which man participated in a series of debates in Illinois during the campaign for the Senate in 1858?

Answer: Stephen Douglas

38. **Math Computation:** Angle A is in quadrant two and the sine of angle A equals 8 over 17. Find the sine of 2A by using the double angle identity for sine, $\sin 2A = 2 \sin A \cos A$ [sine 2 A equals 2 sine A cosine A].

Answer: -240/289

39. This English economist argued for deficit spending in times of recession. Which economist was known for his General Theory of Employment, Interest, and Money?

Answer: John Maynard Keynes

40. This very unusual bone lies anterior to the eyes on a human. What is this perforated bone that forms part of the medial sides of the eye sockets and the roof of the nasal cavity?

Answer: Ethmoid

OSSAA 2022-2023
AREA GAME 5
FOURTH QUARTER
60 SECOND QUESTIONS

CHEMISTRY - CALCULATION OF CHARLES LAW

Directions: Use Charles's Law to calculate the missing measurement, when energy is added to an ideal gas, causing volume and temperature to change while the pressure remains constant. Use the fact that volume and temperature are directly related to find each answer. **Make sure to give the correct units for each, but do not worry about significant digits.**

- | | | |
|-----|--------------------------------------------------------------------------|--------------------------|
| 1. | Gas at 1200 Kelvin and 8 cubic meters expands to 12 cubic meters at... | 1800 Kelvin |
| 2. | Gas at 600 Kelvin and 4 cubic meters expands to 6 cubic meters at... | 900 Kelvin |
| 3. | Gas at 1600 Kelvin and 12 cubic meters expands to 15 cubic meters at... | 2000 Kelvin |
| 4. | Gas at 600 Kelvin and 9 cubic meters expands to 12 cubic meters at... | 800 Kelvin |
| 5. | Gas at 1500 Kelvin and 6 cubic meters expands to 9 cubic meters at... | 2250 Kelvin |
| 6. | Gas at 2500 Kelvin and 30 cubic meters cools down to 1000 Kelvin and ... | 12 cubic meters |
| 7. | Gas at 900 Kelvin and 6 cubic meters cools down to 450 Kelvin and ... | 3 cubic meters |
| 8. | Gas at 1200 Kelvin and 24 cubic meters cools down to 900 Kelvin and ... | 18 cubic meters |
| 9. | Gas at 2700 Kelvin and 15 cubic meters cools down to 1800 Kelvin and ... | 10 cubic meters |
| 10. | Gas at 1600 Kelvin and 18 cubic meters cools down to 1200 Kelvin and ... | 13.5 cubic meters |

EXTRA:

- | | | |
|----|--------------------------------------------------------------------------|------------------------|
| 1. | Gas at 2100 Kelvin and 33 cubic meters cools down to 1400 Kelvin and ... | 22 cubic meters |
| 2. | Gas at 1250 Kelvin and 15 cubic meters cools down to 750 Kelvin and ... | 9 cubic meters |

**OSSAA 2022-2023
AREA GAME 5
FOURTH QUARTER
60 SECOND QUESTIONS**

FINE ARTS - ARTISTS AND ART MOVEMENTS

Directions: Given an artist and an artwork, name the specific art movement with which that artist is MOST associated.

- | | | |
|-----|--------------------------------------------------------------------------|-------------------------------|
| 1. | Jacques Louis David, <i>Napoleon Crossing the Alps</i> | Neoclassicism |
| 2. | Gustav Klimt, <i>The Kiss</i> | Art Nouveau |
| 3. | Berthe Morisot, <i>The Cradle</i> | Impressionism |
| 4. | Victor Vasarely, <i>Zebra</i> | Op Art |
| 5. | Salvador Dali, <i>The Persistence of Memory</i> | Surrealism |
| 6. | Rembrandt, <i>The Night Watch</i> | Baroque |
| 7. | Willem de Kooning, <i>Woman III</i> | Abstract Expressionism |
| 8. | Jasper Johns, <i>Flag</i> | Pop Art |
| 9. | Georges Seurat, <i>Sunday Afternoon on the Island of La Grande Jatte</i> | Post-Impressionism |
| 10. | John Constable, <i>The Hay Wain</i> | Romanticism |

EXTRA:

- | | | |
|----|-----------------------------------------|----------------------|
| 1. | Edvard Munch, <i>The Scream</i> | Expressionism |
| 2. | Jean-Honore Fragonard, <i>The Swing</i> | Rococo |

**OSSAA 2022-2023
AREA GAME 5
FOURTH QUARTER
60 SECOND QUESTIONS**

OKLAHOMA HISTORY - COUNTY SEATS

Directions: Given the name of an Oklahoma county, name the city that serves as the county seat.

- | | | |
|-----|------------|-------------------|
| 1. | Alfalfa | Cherokee |
| 2. | Cherokee | Tahlequah |
| 3. | Choctaw | Hugo |
| 4. | Garfield | Enid |
| 5. | Harper | Buffalo |
| 6. | Kingfisher | Kingfisher |
| 7. | Latimer | Wilburton |
| 8. | McCurtain | Idabel |
| 9. | Cimarron | Boise City |
| 10. | Payne | Stillwater |

EXTRA:

- | | | |
|----|------------|----------------------|
| 1. | Oklahoma | Oklahoma City |
| 2. | Washington | Bartlesville |

OSSAA 2022-2023
AREA GAME 5
EXTRA QUESTIONS

Extras:

- | | Team One | Team Two |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| E1. The fictional character Rooster Cogburn was played by John Wayne in a famous movie based on this book. Which book by Charles Portis introduced readers to the cantankerous U.S. marshal? | _____ | _____ |
| Answer: <u>True Grit</u> | _____ | _____ |
| E2. Math Computation: Find the value of c that makes the following quadratic into a perfect square: $x^2 + 34x + c$ [x squared plus 34 x plus c]. | _____ | _____ |
| Answer: (c=) <u>289</u> | _____ | _____ |
| E3. This man was the first U.S. cabinet official to be found guilty of a felony while in office. Which man served as Secretary of the Interior under President William Harding? | _____ | _____ |
| Answer: <u>Albert Fall</u> | _____ | _____ |
| E4. This actress starred in the movies <i>Romy and Michelle's High School Reunion</i> , <i>Analyze This</i> , and <i>Easy A</i> . Name this actress who played Ursula Buffay on <i>Mad About You</i> and then Ursula's twin, Phoebe, on <i>Friends</i> . | _____ | _____ |
| Answer: <u>Lisa Kudrow</u> | _____ | _____ |
| E5. This artist's painting <i>Massacre at Chios</i> was a representation of the plight of Greeks on the island of Chios after the War of Independence in 1822. Which French Romantic artist also painted <i>Liberty Leading the People</i> ? | _____ | _____ |
| Answer: <u>Eugene Delacroix</u> | _____ | _____ |
| E6. Science computation: A wave, of wavelength 1.50 meters, oscillates at 6.10 hertz. What is the speed of the wave in meters per second? | _____ | _____ |
| Answer: <u>9.15</u> | _____ | _____ |
| E7. This playwright's works include <i>Lost in Yonkers</i> and <i>Barefoot in the Park</i> . Which American playwright also wrote <i>Biloxi Blues</i> ? | _____ | _____ |
| Answer: <u>Neil Simon</u> | _____ | _____ |

OSSAA 2022-2023
AREA GAME 5
EXTRA QUESTIONS

Team One Team Two

- E8. What is the converse of the following conditional statement? If it is a stop sign, then it looks like a regular octagon.

Answer: If it is looks like a regular octagon, then it is a stop sign.

_____ _____

- E9. In 1553, England had three Tudor monarchs in rapid succession, Edward VI, this woman, and Mary I. Which woman served as Queen of England for just nine days?

Answer: Lady Jane Grey

_____ _____

- E10. **Science computation:** Balance the following chemical equation by filling in the blank in the equation: $\text{PCl}_5 + 4\text{H}_2\text{O} \rightarrow \text{H}_3\text{PO}_4 + \underline{\hspace{1cm}}\text{HCl}$ [P C L 5 plus 4 H 2 O forms H 3 P O 4 plus blank H C L] {note these are the letter O not the number zero}.

Answer: 5

_____ _____

**OSSAA 2022-2023
STATE GAME 1
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

1. *The Art of Writing* is a collection of seven essays by this Scottish novelist and travel writer of the 19th century. Which author's essays include one titled "Preface to The Master of Ballantrae?"

Answer: Robert Louis Stevenson

2. **Math Computation:** Solve the following proportion for M:
 $(2m - 2) / 18 = 22/33$ [the quantity 2m minus 2 end quantity over 18 equals 22 over 33].

Answer: (M=) 7

3. This military conflict over Cuba included the Battle of San Juan Hill. Which conflict involving the U.S. took place in 1898?

Answer: Spanish-American War

4. This type of passive transport takes place within the Bowman's capsule in the kidney which allows only albumins through. What is this movement of molecules across a membrane because of hydrostatic pressure?

Answer: Filtration

5. A famous painting by this artist depicts the Nazi aerial attack on a Basque city in 1937. Which Spanish artist included a flower in the lower center of his painting *Guernica*?

Answer: Pablo Picasso

6. Protests in this country began after the death of Mahsa Amini while in police custody and have since transformed into general grievances with the Islamic Republic itself. Name this Middle Eastern country where protests have taken place in Sanandaj, Mashhad, Karaj, and Tabriz.

Answer: Iran

7. Lady Sneerwell is one of the characters in this famous play by Richard Sheridan. In which comedy of manners, published in 1780, does Sir Oliver Surface disguise himself to determine which of his nephews will be his heir?

Answer: The School for Scandal

**OSSAA 2022-2023
STATE GAME 1
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

8. **Math Computation:** Eight people are running for student council, with 3 identical positions available. How many different combinations of officers are possible?

Answer: 56

9. These three men made up the first triumvirate of Rome. Which three men led Rome until one died in battle in 53 BCE and the other two engaged each other in a civil war in 48 BCE?

Answer: Marcus Crassus, Julius Caesar, and Pompey {any order}

10. These extensions of the ethmoid bone form part of the sides of the nasal cavity and increase turbulence of air through the nasal passages. Which seashell-shaped parts of the ethmoid bone force incoming air to cover more internal surface area?

Answer: Nasal conchae

11. During Whitney Houston night, Kim Cruse, a contestant on the Voice, sang a sultry version of the song "Summertime" from this opera. Which folk opera, which debuted on Broadway in 1935, was written by George Gershwin?

Answer: Porgy and Bess

12. Dietrich Mateschitz, the owner and founder of this company, passed away in October 2022. Name this sports drink company known for its sponsorship of extreme sporting events and the slogan it "gives you wings."

Answer: Red Bull

13. *The Flowers of Evil, Ariel, and Lyrical Ballads* are all collections of this type of literature. Which major form of literature is separate from literature classified as prose?

Answer: Poetry

14. **Math Computation:** Angle theta is in quadrant three and the sine of angle theta equals negative 7 over 25. What is the tangent of angle theta?

Answer: 7/24

**OSSAA 2022-2023
STATE GAME 1
FIRST QUARTER
TOSS UP QUESTIONS**

- | | Team One | Team Two |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| 15. This Spanish city is home to the famous Guggenheim Museum. Which city is the capital of Vizcaya province in the Basque area of northern Spain? | _____ | _____ |
| Answer: Bilbao | | |
| 16. Types of this oceanic material include siliceous and calcareous varieties. What "O" name is given to these pelagic sediments of the ocean floor that contain at least 30% microscopic planktonic debris? | _____ | _____ |
| Answer: Ooze | | |
| 17. This statue is the second-largest copper repousse statue in the U.S., after the Statue of Liberty. What is the title of this statue by Raymond Kaskey located in Oregon's largest city? | _____ | _____ |
| Answer: Portlandia | | |
| 18. During the 2022 Primetime Emmy Awards this show won for Outstanding Comedy Series. Name this Apple TV+ show starring Jason Sudeikis as an American coaching an English soccer team. | _____ | _____ |
| Answer: <u>Ted Lasso</u> | | |
| 19. Short stories by this American author include "Barn Burning" and "A Rose for Emily." Which southern author of the 20th century won the Pulitzer Prize in 1963 for his novel <i>The Reivers: A Reminiscence</i> ? | _____ | _____ |
| Answer: William <u>Faulkner</u> | | |
| 20. This test is used in calculus to determine whether F of C is a relative minimum or relative maximum. Which test looks at F double prime of X being positive or negative when F prime of C equals zero? | _____ | _____ |
| Answer: <u>Second Derivative Test</u> | | |

**OSSAA 2022-2023
STATE GAME 1
SECOND QUARTER
60 SECOND QUESTIONS**

ENTERTAINMENT - MOVIES ABOUT BANDS OR MUSIC

Directions: Identify each of the following movies that were about musical acts or their music.

1. Freddie Mercury joins Queen *Bohemian Rhapsody*
2. Johnny Cash meets and marries June Carter *Walk the Line*
3. The life and career of Elton John *Rocketman*
4. Jack seems to be the only person who remembers The Beatles and their music *Yesterday*
5. Eazy-E, Ice Cube, and Dr. Dre are part of N.W.A. *Straight Outta Compton*
6. Alcoholic country singer, Jack, discovers Ally and helps lead her to success *A Star is Born*
7. Frankie Valli and 3 others from The Four Seasons *Jersey Boys*
8. Tommy Lee, Nikki Sixx, Vince Neil, and Mick Mars form Motley Crue *The Dirt*
9. Blind musician fights heroin addiction while recording numerous hits *Ray*
10. Otis Blake fights alcoholism and writes a top hit for Tommy Sweet *Crazy Heart*

EXTRA:

1. Deena, Effie, and Lorrell form the Dreamettes *Dreamgirls*
2. Aretha Franklin becomes the “Queen of Soul” *Respect*

**OSSAA 2022-2023
STATE GAME 1
SECOND QUARTER
60 SECOND QUESTIONS**

SPORTS - NBA PLAYER NICKNAMES

Directions: From the nickname, identify the first and last names for each of the following players who have played in the National Basketball Association in the last 20 years.

- | | |
|--------------------------|------------------------------|
| 1. The Greek Freak | Giannis Antetokounmpo |
| 2. King James | LeBron James |
| 3. The Black Mamba | Kobe Bryant |
| 4. The Process | Joel Embiid |
| 5. Cool Hand Luka | Luka Doncic |
| 6. The Beard | James Hardin |
| 7. The Claw | Kawhi Leonard |
| 8. Big Ticket | Kevin Garnett |
| 9. Vinsanity | Vince Carter |
| 10. The French Rejection | Rudy Gobert |

EXTRA:

- | | |
|--------------------|---------------------|
| 1. The Truth | Paul Pierce |
| 2. The Slim Reaper | Kevin Durant |

**OSSAA 2022-2023
STATE GAME 1
SECOND QUARTER
60 SECOND QUESTIONS**

MUSIC - NICKNAMES OF FAMOUS SINGERS

Directions: Given the nickname of a famous singer, name the singer.

- | | | |
|-----|-------------------------|----------------------------------|
| 1. | The Piano Man | Billy <u>Joel</u> |
| 2. | Ol' Blue Eyes | Frank <u>Sinatra</u> |
| 3. | The Queen of Soul | Aretha <u>Franklin</u> |
| 4. | The Swedish Nightingale | Jenny <u>Lind</u> |
| 5. | Bocephus | Hank <u>Williams, Jr.</u> |
| 6. | The Singing Cowboy | Gene <u>Autry</u> |
| 7. | The Boss | Bruce <u>Springsteen</u> |
| 8. | Mr. Las Vegas | Wayne <u>Newton</u> |
| 9. | Godfather of Soul | James <u>Brown</u> |
| 10. | The Prince of Darkness | Ozzy <u>Osbourne</u> |

EXTRA:

- | | | |
|----|------------------|----------------------------|
| 1. | The Possum | George <u>Jones</u> |
| 2. | The Man in Black | Johnny <u>Cash</u> |

**OSSAA 2022-2023
STATE GAME 1
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

21. This Native American tribe was the only member of the Five Civilized Tribes to speak an Iroquois language. Which tribe was the first to have a written syllabary of their language?

Answer: Cherokee

22. **Science computation:** Balance the following chemical equation by filling in both blanks in the equation: $10\text{KClO}_3 + 3\text{P}_4 \rightarrow \underline{\quad}\text{P}_4\text{O}_{10} + \underline{\quad}\text{KCl}$ [10 K C L O 3 plus 3 P 4 forms blank P 4 O 10 plus blank K C L] {note these are the letter O not the number zero}.

Answer: 3 and 10 {in that order}

23. This type of salad is made with sliced mozzarella, tomatoes, basil, and olive oil. What is the name for this Italian salad generally served as an appetizer?

Answer: Caprese salad

24. In October 2022, NRG announced that this FPS streamer would no longer be competing under their banner. What esports player competed on NRG's Apex Legends team before transitioning to be a force on the VALORANT platform?

Answer: Brandon Winn (or aceu)

25. The words this, that, these, and those are the most commonly used of this form of adjective. What is the name for the type of adjective which comes just before a noun or pronoun and tells which one it is specifically modifying?

Answer: Demonstrative adjectives

26. **Math Computation:** A regular hexagon has sides that measure 10 feet. What is the exact area of the hexagon in square feet?

Answer: $150\sqrt{3}$ [150 radical (square root) 3]

27. This former U.S. senator from Illinois practiced as a civil rights attorney before running for U.S. president. Which man became the first African American president of the United States?

Answer: Barack Obama

**OSSAA 2022-2023
STATE GAME 1
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

28. The three types of population dispersion of an organism in an environment are randomly dispersed, uniformly dispersed, and this type. What is the dispersion pattern in which the individual organisms stay close to one another because the resources needed are close to each other?

Answer: Clumping

29. This man holds the record as the first person to reach 500 million followers on Instagram. Who is this soccer star who also became the first man to score in five World Cups in 2022?

Answer: Cristiano Ronaldo

30. In October 2022, this gubernatorial candidate pledged to “serve eight years” if elected governor in her state. Name this former TV news anchor who lost to Katie Hobbs in her bid to be the next governor of Arizona.

Answer: Kari Lake

31. Gaston Leroux wrote the book and Andrew Lloyd Webber scored the musical. Name this work about a disfigured man obsessed with a singer.

Answer: The Phantom of the Opera

32. **Math Computation:** When using cooking measurements, how many teaspoons are there in 14 tablespoons?

Answer: 42

33. Texas, Iowa, and Wisconsin became states during the presidency of this man. Which former Tennessee governor is considered the first dark-horse candidate for U.S. president?

Answer: James K. Polk

34. **Science computation:** A cement block is dropped from a hovering helicopter, hitting the ground after 4.50 seconds. Assuming gravity is 10.0 meters per second squared and using the equation $\Delta x=1/2at^2$ [delta x equals one half a t squared], how high above the ground was the helicopter in meters? Make sure to use the correct number of significant digits in your answer.

Answer: 101

**OSSAA 2022-2023
STATE GAME 1
THIRD QUARTER
TOSS UP QUESTIONS**

- | | | Team One | Team Two |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| 35. | This artist is known for his sparse geometric paintings, like <i>Black Square</i> and his <i>White on White</i> series. Which artist is credited as the founder of Suprematism? | _____ | _____ |
| | Answer: Kasimir Malevich | _____ | _____ |
| 36. | This man announced his retirement from the ATP tour in September 2022. Name this Swiss tennis legend who won 20 Grand Slam singles titles, including a record 8 Wimbledon titles. | _____ | _____ |
| | Answer: Roger Federer | _____ | _____ |
| 37. | This theater owner and stage actor is generally considered to be one of the most famous actors of the Globe theater. Which man was the first player of Shakespeare's Richard III, Romeo, Hamlet, Macbeth, and King Lear? | _____ | _____ |
| | Answer: Richard Burbage | _____ | _____ |
| 38. | Math Computation: Jimmy can paint a wall in 9 hours while Jimmy and Hwang together can paint that same wall in 6 hours. How long, in hours, would it take for Hwang to paint it by himself? | _____ | _____ |
| | Answer: 18 | _____ | _____ |
| 39. | This historical event began with the U.S. stock market crash of 1929. Which event lasted ten years and resulted in severe unemployment and acute deflation in almost every country in the world? | _____ | _____ |
| | Answer: Great Depression | _____ | _____ |
| 40. | This man starred as the Goblin King in the movie <i>Labyrinth</i> but is best known for his music. Name this singer and songwriter of "Starman", "Space Oddity", and "Let's Dance". | _____ | _____ |
| | Answer: David Bowie | _____ | _____ |

**OSSAA 2022-2023
STATE GAME 1
FOURTH QUARTER
60 SECOND QUESTIONS**

VOCABULARY - WORDS BEGINNING WITH P

Directions: Given a brief definition, identify the following words beginning with P.

- | | | |
|-----|------------------------------------------------------|-----------------------|
| 1. | Someone opposed to violence for settling disputes | Pacifist |
| 2. | Someone who makes charitable donations | Philanthropist |
| 3. | Hypothetical remedy for all diseases | Panacea |
| 4. | A statement that contradicts itself | Paradox |
| 5. | Puffed up with vanity | Pompous |
| 6. | Written work that mocks or imitates a writer's style | Parody |
| 7. | Devoted to a cause or political group | Partisan |
| 8. | Fraught with danger | Perilous |
| 9. | Able to be felt by tactile examination | Palpable |
| 10. | Political system governed by the wealthy | Plutocracy |

EXTRA:

- | | | |
|----|--------------------------------------------|-----------------|
| 1. | Model of excellence or perfection | Paragon |
| 2. | Preliminary introduction to a constitution | Preamble |

**OSSAA 2022-2023
STATE GAME 1
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH - GEOMETRY CBAS

Directions: Identify each of the following terms found in geometry from the given clue. The answers will be alphabetically backwards, beginning with N, but skipping J.

- | | | |
|-----|-------------------------------------------------------------------------------|------------------------------|
| 1. | Nine-sided polygon | Nonagon |
| 2. | Segment from a vertex to the midpoint of the opposite side of a triangle | Median |
| 3. | Set of all points that fit a given criteria | Locus |
| 4. | A quadrilateral with two pairs of congruent adjacent sides | Kite |
| 5. | Triangle with two congruent sides | Isosceles |
| 6. | The regular one of these is a cube | Hexahedron |
| 7. | Intersection of a plane with a sphere through its center | Great circle |
| 8. | The surface of a polyhedron | Face |
| 9. | Angle formed from the side of a polygon and the extension of an adjacent side | <u>Exterior angle</u> |
| 10. | One 360 th of a rotation around a circle | Degree |

EXTRA:

- | | | |
|----|----------------------------------------------|-----------------------|
| 1. | “If p, then q” becomes “if not q then not p” | Contrapositive |
| 2. | A figure that hits a segment at its midpoint | Bisector |

**OSSAA 2022-2023
STATE GAME 1
FOURTH QUARTER
60 SECOND QUESTIONS**

SCIENCE – COMPUTATION SIGNIFICANT DIGITS

Directions: For each of the following numbers, identify how many significant digits or figures each number has. {Moderator- say point for the decimal and say all zeroes. For example, 4.500 would be four point five zero zero}

- | | | |
|-----|---------------------------------------------------------------------------------------------------------------------------------|---|
| 1. | 120 | 2 |
| 2. | 259,000 | 3 |
| 3. | 1,005 | 4 |
| 4. | 0.100 | 3 |
| 5. | 2.0001 | 5 |
| 6. | 1/2 times 1680 | 3 |
| 7. | 1.02×10^6 [1.02 times ten to the sixth] | 3 |
| 8. | $480 + 1200$ | 2 |
| 9. | 1.2×10^3 minus 8.12×10^2 [1 point two times ten to the third minus 8 point one two times ten to the second] | 1 |
| 10. | 1.05×10^3 plus 2.3×10^2 [1 point zero five times ten to the third plus 2 point three times ten to the second] | 3 |

EXTRA:

- | | | |
|----|-------------------------------------------------------------|---|
| 1. | 16 million | 2 |
| 2. | $873 + 1.3 \times 10^2$ [1 point 3 times ten to the second] | 2 |

OSSAA 2022-2023
STATE GAME 1
EXTRA QUESTIONS

Extra:

- E1. This composer is responsible for the Wedding March used in most modern weddings. Which composer wrote the incidental music for Shakespeare's play *A Midsummer Night's Dream*?

Answer: Felix Mendelssohn

Team One Team Two

- E2. This element is the most abundant element in ocean water. Name this element that makes up about 55% of the mass of the dissolved salts in ocean water.

Answer: Chlorine

- E3. This woman's poem *To His Excellency, General Washington* was published in 1773. Which African American woman wrote the poem in support of his campaign against the British?

Answer: Phyllis Wheatley

- E4. **Math Computation:** Fill in the blank in the following trigonometric identity:
 $\sin A \cos B + \cos A \sin B = \dots$ [sine A cosine B plus cosine A sine B equals ...]

Answer: sin (A + B) [sine (the quantity) A plus B]

- E5. This mountain near the equator is the closest mountain on Earth to outer space. What is the name of this mountain located in Ecuador?

Answer: Mt. Chimborazo

- E6. This NBA head coach was suspended for an entire year by his team after it was found he had violated team policies regarding relations with subordinates. Name this man who coached the Boston Celtics to the 2022 NBA Finals.

Answer: Ime Udoka

- E7. Gothic architecture was an evolution in style from this architectural style. Which style was known for its thick walls, barrel vaults, round arches, and large towers?

Answer: Romanesque

**OSSAA 2022-2023
STATE GAME 1
EXTRA QUESTIONS**

Team One Team Two

- E8. **Math Computation:** What are the two factors of the quadratic $x^2 + 18x + 80$ [x squared plus 18x plus 80]?

Answer: x + 10 and x + 8 {either order}

_____ _____

- E9. This term describes someone who can write with both the right and the left hand. What is this 4-syllable word?

Answer: Ambidextrous

_____ _____

- E10. This bone is the strongest and largest bone in the human face. What is the medical name for the lower jaw?

Answer: Mandible

_____ _____

**OSSAA 2022-2023
STATE GAME 2
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

1. **Math Computation:** Convert the polar coordinates $(8, \pi/3)$ [8 comma pi over 3] into rectangular coordinates. Express your answer as (x, y) [x comma y].

Answer: **(4, $4\sqrt{3}$) [4 comma 4 radical (square root of) 3]**

2. This tenant farmers' revolt broke out in three Oklahoma counties in August 1917. Which revolt gained national attention when hundreds of men planned to march to Washington to protest against the federal Conscription Act?

Answer: **Green Corn Rebellion**

3. In this type of osmosis, water diffuses into a cell and the cell enlarges. Name this solution where the concentration of dissolved particles is greater inside the cell, pulling the higher concentrated water solution outside the cell inwards.

Answer: **Hypotonic**

4. For those in the know, the difference between a sherbet and a sorbet [sor-bay] is the inclusion of this ingredient. Which dairy product is used in sherbet but not sorbet?

Answer: **Milk**

5. In October 2022, this spouse of a politician was attacked by an intruder in his house in San Francisco. Name this man who suffered a fractured skull when the hammer-wielding intruder attacked him.

Answer: **Paul Pelosi**

6. This term refers to any verb that can take a direct object. What is the name for the type of action verb that is followed by a direct object in a sentence?

Answer: **Transitive**

7. **Math Computation:** Convert into a binary number, the base ten number 62.

Answer: **111110 [one one one one one zero]**

**OSSAA 2022-2023
STATE GAME 2
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

8. This U.S. political party was founded in 1792 and supported the National Bank. Which party was founded by Alexander Hamilton?

Answer: Federalist

9. **Science computation:** What is the molecular formula of potassium carbonate?

Answer: K₂CO₃ [K 2 C O 3]

10. This Italian term is used for any artwork depicting Mary mourning over the body of Jesus. What is this term given to the statue created by Michelangelo that resides in St. Peter's Basilica?

Answer: Pieta

11. Nicknamed “Mr. Hockey,” this man played 26 seasons in the NHL and 6 seasons in the WHA. Which Canadian led the league in scoring six times and finally retired at age 52, after playing in the NHL in 5 different decades?

Answer: Gordie Howe

12. This book by Lois Lowry is set in Denmark during the Nazi occupation. Which book tells the story of Annemarie Johansen who saves her Jewish best friend Ellen by pretending Ellen is her sister?

Answer: Number the Stars

13. **Math Computation:** What is the determinant of the matrix which has elements 21 and 18 top row left to right and elements 4 and 6 bottom row left to right?

Answer: 54

14. The 1957 desegregation of Central High School in Little Rock, Arkansas took place during the administration of this U.S. president. Which president refused to let the governor of Arkansas ignore the desegregation plan?

Answer: Dwight D. Eisenhower

**OSSAA 2022-2023
STATE GAME 2
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

15. Researchers Baum and Valins were working in this branch of psychology when they studied the effect of dorm room arrangements on student behavior at colleges in the 1970s. Name this branch of psychology that studies the effect of buildings on human behavior.

Answer: Architectural psychology

16. Henri de Toulouse-Lautrec painted an actual portrait of this famous Irish author. Which author was known for his fictional portrait of Dorian Gray?

Answer: Oscar Wilde

17. This former coal miner's daughter passed away in October 2022. Which country music icon had 24 singles and 11 albums that hit number 1 on the country music charts, including the song "Don't Come Home a Drinkin' (With Lovin' On Your Mind)".

Answer: Loretta Lynn

18. This Latin phrase is translated as "without charge." What is this Latin two-word phrase often associated with legal work done as charity?

Answer: Pro bono

19. **Math Computation:** A transversal cuts across two parallel lines. If the measures of two consecutive interior angles are $(x - 5)$ and $(x + 9)$ degrees, what are the measures of the two angles in degrees?

Answer: 83, 97

20. This country's Bataan province was the site of a brutal death march during World War II. Which country was attacked by Japan on December 8, 1941?

Answer: The Philippines

**OSSAA 2022-2023
STATE GAME 2
SECOND QUARTER
60 SECOND QUESTIONS**

HUMANITIES - SIGNS OF THE ZODIAC

Directions: Given the dates of a sign of the zodiac, identify the sign and its symbol.

- | | | |
|-----|--------------------------|-------------------------------|
| 1. | June 22- July 22 | Cancer, Crab |
| 2. | July 23- August 22 | Leo, Lion |
| 3. | November 22- December 21 | Sagittarius, Archer |
| 4. | February 19- March 20 | Pisces, Fish |
| 5. | January 20- February 18 | Aquarius, Water Bearer |
| 6. | December 22- January 19 | Capricorn(us), Goat |
| 7. | May 21- June 21 | Gemini, Twins |
| 8. | March 21- April 19 | Aries, Ram |
| 9. | August 23- September 22 | Virgo, Virgin |
| 10. | October 24- November 21 | Scorpius, Scorpion |

EXTRA:

- | | | |
|----|--------------------------|-----------------------------------|
| 1. | September 23- October 23 | Libra, Balance (or Scales) |
| 2. | April 20- May 20 | Taurus, Bull |

**OSSAA 2022-2023
STATE GAME 2
SECOND QUARTER
60 SECOND QUESTIONS**

SPORTS - BOXING GREATS

Directions: Identify each of the following boxers from the clue given.

1. Danced like a butterfly, floated like a bee; nicknamed “The Greatest” **Muhammad Ali** (or Cassius Clay)
2. “Iron Mike” who won his first 19 fights by knockout **Mike Tyson**
3. Lost the “Rumble in the Jungle” to Muhammad Ali, but has done well selling grills **George Foreman**
4. Had part of his ear bitten off by Mike Tyson in a heavyweight fight **Evander Holyfield**
5. Undefeated record of 50-0 from 1996 to 2017 **Floyd Mayweather Jr.**
6. The “Brown Bomber” who defended his heavyweight title 25 consecutive times **Joe Louis**
7. Only heavyweight to finish his career undefeated **Rocky Marciano**
8. First boxer to \$100 million in purses; “Boxer of the Decade” in the 1980s **Sugar Ray Leonard**
9. “Hands of Stone” fighter who said “No mas” to Sugar Ray Leonard in 1980 **Roberto Duran**
10. Subject of the Robert DeNiro movie “Raging Bull” **Jake LaMotta**

EXTRA:

1. “The Golden Boy of boxing” who had titles in 6 weight classes **Oscar De La Hoya**
2. “The Hitman” who controversially was only given a draw against Sugar Ray Leonard in 1989 **Thomas Hearns**

**OSSAA 2022-2023
STATE GAME 2
SECOND QUARTER
60 SECOND QUESTIONS**

ENTERTAINMENT - 2022 OSCAR WINNERS

Directions: Name the winner of each of the following awards given out at the 94th Academy Awards in February 2022. You will be given the category and a short clue – you name the person chosen as the best in that category

- | | | |
|-----|--------------------------------------------------------------------------------------------------|-------------------------|
| 1. | Actor; starred as Richard Williams in <i>King Richard</i> | <u>Will Smith</u> |
| 2. | Actress; starred as Tammy Faye Bakker in <i>The Eyes of Tammy Faye</i> | <u>Jessica Chastain</u> |
| 3. | Picture; aspiring singer helps her deaf family run fishing business | <i>CODA</i> |
| 4. | Animated Feature Film; Madrigal family starts to lose their magic | <i>Encanto</i> |
| 5. | Original Score; movie about Paul Atreides escape to the Fremen | <i>Dune</i> |
| 6. | Costume Design; Estella Miller transforms into a dog-stealing villain | <u>Cruella</u> |
| 7. | Director; for the film <i>The Power of the Dog</i> | <u>Jane Campion</u> |
| 8. | Supporting Actress; as Anita from <i>West Side Story</i> | <u>Ariana DeBose</u> |
| 9. | International Feature Film; Japanese director of theater production deals with death of his wife | <i>Drive My Car</i> |
| 10. | Supporting Actor; as Frank Rossi from <i>CODA</i> | <u>Troy Kotsur</u> |

EXTRA:

- | | | |
|----|----------------------------------------------------------------------------------------|-------------------------|
| 1. | Original Song; theme song from the 2021 James Bond film | “No Time to Die” |
| 2. | Original Screenplay; nine-year-old Buddy lives through The Troubles in Ireland in 1969 | <i>Belfast</i> |

**OSSAA 2022-2023
STATE GAME 2
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

21. This term is used by geologists for a floating layer of sea ice that fully covers a region of the ocean surface. What two-word term describes this layer of ice that is usually less than 15 feet thick?

Answer: Pack ice

22. Songs in this musical include "America" and "I Feel Pretty." Name this musical, adapted from a Shakespeare play, about street gangs in America.

Answer: West Side Story

23. In September 2022, this actress and singer announced the launch of her digital television network, KeyTV. Name this actress from the movies *Animal*, *Hustlers*, and *Nope*, as well as the series *Scream Queens* and *Turnt Up with the Taylors*.

Answer: Keke Palmer (Lauren Keyana Palmer)

24. These water flowers represent purity and have symbolic significance in Buddhism. Which flowers were also a symbol of creation and rebirth in the ancient Egyptian religion?

Answer: Lotus

25. **Math Computation:** Company B has a market share of 35 points. If the total number of units sold per year in this market is 3000 units, how many did Company B produce?

Answer: 1050

26. The Battle of Bloody Marsh helped set the border of this U.S. state. Which state holds the record for having the most golf courses in America?

Answer: Florida

27. These nerves control movements of the tongue. What are these nerves that run from the medulla to the tongue?

Answer: Hypoglossal

OSSAA 2022-2023
STATE GAME 2
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

28. This famous sculpture is part of a larger work titled *The Gates of Hell*. Which sculpture by Auguste Rodin is meant to represent a famous Italian poet?

Answer: The Thinker

_____ _____

29. In October 2022, this man was traded to the San Francisco 49ers in exchange for 4 draft picks. Name this running back who had played for the Carolina Panthers since 2017.

Answer: Christian McAffrey

_____ _____

30. This woman introduced the idea of a holiday honoring mothers in 1870, but is better known for a famous pro-Union, anti-slavery anthem. Which American abolitionist penned the lyrics for *The Battle Hymn of the Republic*?

Answer: Julia Ward Howe

_____ _____

31. This method is used for finding the volume of a solid created by rotating the distance between the functions $y = x$ and $y = \sqrt{x}$ around the x axis. What is this method of integration where you find the area of the outside distance minus the inside distance, each squared, and multiply by pi?

Answer: Washer method

_____ _____

32. This river carries most of Oklahoma's runoff water. Which river originates near Leadville, Colorado and joins the Mississippi River in eastern Arkansas?

Answer: Arkansas River

_____ _____

33. **Science computation:** What is the average velocity of a millipede that travels from the 11.5 centimeter mark on a ruler to the 45 centimeter meter mark in 5.0 seconds? Put your answer in centimeters per second, with the correct number of significant digits.

Answer: 6.7

_____ _____

OSSAA 2022-2023
STATE GAME 2
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

34. This variety of long-grained rice is commonly grown in the Himalayas, India, and Pakistan. Which variety of rice is traditionally served with curries and in biryani?

Answer: **Basmati Rice**

35. In October 2022, a line of fuel trucks exploded on this bridge, bringing down two spans of the bridge and severely limiting the number of military vehicles that could use the bridge. Name this bridge connecting Russia to Crimea that was of strategic importance to Russia's invasion of Ukraine.

Answer: **Kerch bridge**

36. This term is defined as the customary code of polite behavior in society. With which code was Emily Post considered an expert, writing the definitive book on the subject in 1922?

Answer: **Etiquette**

37. **Math Computation:** Solve for x in the following equation: $3/4 x - 5/6 = 1/2$ [three fourths x minus five sixths equals one half]

Answer: **(x=) 16/9 (or 1 & 7/9)**

38. This term is defined as goods shipped to foreign countries. What is this term for trade activity that is included in a country's GDP?

Answer: **Exports**

39. This two-word phrase is used by astronomers for the two periods during a year when the line of nodes between the Sun, Moon, and Earth coincides and eclipses are possible. Which time frame changes 19 days backwards every year on the calendar, allowing accurate prediction of eclipses?

Answer: **Eclipse season**

40. In Norse mythology, this god of light and beauty was the father of Forseti. Name this god killed by a dart of mistletoe during Ragnarok.

Answer: **Baldur**

**OSSAA 2022-2023
STATE GAME 2
FOURTH QUARTER
60 SECOND QUESTIONS**

U. S. GEOGRAPHY - STATE CAPITALS

Directions: Given the nickname of a U.S. state, name its capital city.

- | | | |
|-----|----------------------|--------------------|
| 1. | The Old Line State | Annapolis |
| 2. | Mountain State | Charleston |
| 3. | Green Mountain State | Montpelier |
| 4. | Volunteer State | Nashville |
| 5. | Keystone State | Harrisburg |
| 6. | Beaver State | Salem |
| 7. | Peace Garden State | Bismarck |
| 8. | Silver State | Carson City |
| 9. | Great Lakes State | Lansing |
| 10. | Pelican State | Baton Rouge |

EXTRA:

- | | | |
|----|-------------|-----------------|
| 1. | Aloha State | Honolulu |
| 2. | Peach State | Atlanta |

**OSSAA 2022-2023
STATE GAME 2
FOURTH QUARTER
60 SECOND QUESTIONS**

LITERATURE - SCIENCE FICTION CLASSICS

Directions: Given the title of a novel considered a science fiction classic, name the author.

- | | | |
|-----|--------------------------------------|---------------------------------|
| 1. | A Journey to the Center of the Earth | Jules <u>Verne</u> |
| 2. | The War of the Worlds | H. G. <u>Wells</u> |
| 3. | Brave New World | Aldous <u>Huxley</u> |
| 4. | 1984 | George <u>Orwell</u> |
| 5. | Foundation | Isaac <u>Asimov</u> |
| 6. | The Illustrated Man | Ray <u>Bradbury</u> |
| 7. | Starship Troopers | Robert <u>Heinlein</u> |
| 8. | A Wrinkle in Time | Madeleine <u>L'Engle</u> |
| 9. | Dune | Frank <u>Herbert</u> |
| 10. | Do Androids Dream of Electric Sheep? | Philip K. <u>Dick</u> |

EXTRA:

- | | | |
|----|---------------------------|--------------------------------|
| 1. | The Left Hand of Darkness | Ursula K. <u>LeGuin</u> |
| 2. | The Stand | Stephen <u>King</u> |

**OSSAA 2022-2023
STATE GAME 2
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH - GEOMETRIC MEAN

Directions: Find the geometric mean between the two given numbers. As necessary, express your answer in radical form.

1.	64 and 16	32
2.	49 and 81	63
3.	121 and 169	143
4.	900 and 1024	960
5.	25 and 36	30
6.	144 and 400	240
7.	20 and 45	30
8.	32 and 72	48
9.	64 and 108	$48\sqrt{3}$ [48 radical 3 or 48 times the square root of 3]
10.	80 and 90	$60\sqrt{2}$

EXTRA:

1.	72 and 162	108
2.	45 and 80	60

OSSAA 2022-2023
STATE GAME 2
EXTRA QUESTIONS

Extra:

- | | Team One | Team Two |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| E1. This woman is the second-most-followed creator on the TikTok platform. Which former competitive dancer has more than 100 million followers and released her debut single “If You Ask Me To” in October 2022? | _____ | _____ |
| Answer: <u>Charli D'Amelio</u> | _____ | _____ |
| E2. Much of the action of this Jazz Age novel takes place in West Egg, New York. Which novel tells the story of a man obsessed with getting back his lost love, Daisy Buchanan? | _____ | _____ |
| Answer: <u>The Great Gatsby</u> | _____ | _____ |
| E3. Math Computation: What is the range of the following set of data: 181, 642, 813, 516, and 345? | _____ | _____ |
| Answer: <u>632</u> | _____ | _____ |
| E4. This man is credited with inventing the first practical sewing machine. Which inventor revolutionized the garment industry with his invention? | _____ | _____ |
| Answer: <u>Elias Howe</u> | _____ | _____ |
| E5. This man is considered the father of mathematical physics and first theoretical physicist. Which Dutch scientist analyzed the rings of Saturn, discovered the moon Titan, and invented the pendulum clock, the most accurate timekeeper for 300 years? | _____ | _____ |
| Answer: <u>Christiaan Huygens</u> | _____ | _____ |
| E6. In color theory, this color is blue's complementary color. Which color falls halfway between yellow and red on the color wheel? | _____ | _____ |
| Answer: <u>Orange</u> | _____ | _____ |
| E7. In October 2022, five tourists were stuck underground at this site for 24 hours when an elevator broke down. Name this Peach Springs, Arizona, tourist spot, one of the largest dry caverns in the world. | _____ | _____ |
| Answer: <u>Grand Canyon Caverns</u> | _____ | _____ |

**OSSAA 2022-2023
STATE GAME 2
EXTRA QUESTIONS**

Team One Team Two

- E8. This play features the interaction between a young Helen Keller and her teacher Ann Sullivan. What is the title of this play by William Gibson?

Answer: The Miracle Worker

_____ _____

- E9. **Science computation:** Two answers required. Describe the number of significant figures in both of the following numbers: 16300 and 1.0020

Answer: 3 and 5 {must be in order}

_____ _____

- E10. This Roman emperor was the third of the group labeled the "Five Good Emperors." Which Roman emperor is remembered for a wall built across northern Britain?

Answer: Hadrian

_____ _____

**OSSAA 2022-2023
STATE GAME 3
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

1. This musical instrument was played by both John Coltrane and Charlie Parker. Which jazz instrument comes in sopranino, soprano, alto, tenor, baritone, and bass versions?

Answer: Saxophone

_____ _____

2. **Math Computation:** Solve the following equation for H: $-H/9 + 62 = -73$ [negative H over 9 plus 62 equals negative 73].

Answer: (H=) 1215

_____ _____

3. According to Homer, this Greek god saved Odysseus from both Circe and Calypso. Which Greek god was considered a dream god by the Greeks, who offered him the last libation before sleep?

Answer: Hermes

_____ _____

4. This double walled sac has an outer layer of connective tissue and an inner layer of serous membrane. What is this double layered sac enclosing the heart?

Answer: Pericardium

_____ _____

5. This mountain, located on the border of Pakistan and China is the second tallest mountain in the world. What is the alpha-numerical name of this mountain also known as Mount Godwin-Austen?

Answer: K2

_____ _____

6. This woman became the shortest serving prime minister in British history when she resigned on October 20, 2022, serving for only six weeks. Which woman succeeded Boris Johnson as leader of the Conservative Party?

Answer: Liz Truss

_____ _____

7. The Greek Parthenon is a classic example of this style of Greek architecture. Which style of columns are fluted, have no base, and exhibit a plain capital?

Answer: Doric

_____ _____

OSSAA 2022-2023
STATE GAME 3
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

8. **Math Computation:** What is the indefinite integral of the function:
 $24x^3 + 18x^2 - 12$ [24 x to the third plus 18 x squared minus 12]?

Answer: $6x^4 + 6x^3 - 12x + c$ [6 x to the fourth plus 6 x cubed minus 12x plus c] {must say + c}

9. This common Sanskrit greeting means "I bow to you." What is this word often heard in yoga studios in America?

Answer: Namaste [Nuh-mah'-stay]

10. **Science computation:** A jet accelerates evenly at 1.7 meters per second squared for 5.0 seconds. If the initial velocity was 12.5 meters per second squared, what will be the final velocity in meters per second squared?

Answer: 21 (or 21.0)

11. This Civil War battle was the first outside of Indian Territory in which Native American troops engaged. Which battle was fought near Elkhorn Tavern, northeast of Fayetteville and resulted in a Union victory?

Answer: Battle of Pea Ridge

12. After he made antisemitic remarks in 2022, numerous companies cut ties with this entertainment mogul. Which rapper lost deals with Adidas, JPMorgan Chase, CAA, and Vogue, among others, dropping his net worth more than \$2 billion?

Answer: Kanye West (or Ye)

13. This type of fatty acid, considered to be of major health benefit, is found in most fish. What is the name for these fats that can also be found in nuts and flaxseeds?

Answer: Omega-3

14. **Math Computation:** Take matrix A and multiply by matrix B: Matrix A has elements 5 and negative 2 top row left to right, and elements 7 and 4 bottom row left to right. Matrix B has elements 3 and -5 top row left to right and elements 2 and 5 bottom row left to right. Remember to multiply each row by each column to find the elements in the answer.

Answer: 11 and -35 top row left to right, 29 and -15 bottom row left to right

**OSSAA 2022-2023
STATE GAME 3
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

15. Small crowd, sweet sorrow, and silent scream are all examples of this figure of speech. Which literary device uses contradictory terms to create a new meaning?

Answer: Oxymoron

_____ _____

16. In insects, this hormone induces molting through the reabsorption of part of the old cuticle and formation of a new cuticle. Which hormone is produced in the prothoracic glands when they are stimulated by the thoracotrophic hormone?

Answer: Ecdysone

_____ _____

17. This two-word term indicates the power of government to take private property for public use. What phrase identifies this power set forth in the 5th amendment to the U.S. Constitution?

Answer: Eminent Domain

_____ _____

18. This Amazon Prime series is set during the Second Age of Middle Earth. Name this series that follows the elf warrior Galadriel as she tries to find where Sauron is hiding, as well as the travels of Harfoot hobbits, and Southlanders battling Orcs.

Answer: The Lord of the Rings: The Rings of Power

_____ _____

19. This four-letter word refers to a light, flexible fencing sword with a blunt tip. What is this name for the weapon originally designed as a practice weapon for the smallsword used in the 17th century?

Answer: Foil

_____ _____

20. **Math Computation:** What is the sum of the infinite geometric series that begins with 25 and has a common ratio of one sixth?

Answer: 30

_____ _____

**OSSAA 2022-2023
STATE GAME 3
SECOND QUARTER
60 SECOND QUESTIONS**

CURRENT EVENTS - FAMOUS PEOPLE WHO DIED IN 2022

Directions: Identify the following famous people who died in the year 2022.

1. Boston Celtics center with 11 NBA Championships; NBA retired his #6 jersey **Bill Russell**
2. Sang “You’re the One That I Want” with John Travolta from *Grease* **Olivia Newton-John**
3. Bahamian-American actor from *Lilies of the Field* and *To Sir, with Love* **Sidney Poitier**
4. Actor from *Goodfellas* and *Field of Dreams* **Ray Liotta**
5. Singer of “Great Balls of Fire” and “Whole Lotta Shakin’ Goin’ On” **Jerry Lee Lewis**
6. Rapper of “Gangsta’s Paradise” **Coolio**
7. Actress who was a partner to Ellen DeGeneres **Anne Heche**
8. Voiced the parrot Iago in *Aladdin* movies **Gilbert Gottfried**
9. Hall-of-Fame punter for the Raiders that wore #8 **Ray Guy**
10. Stand-up comedian known for smashing a watermelon on stage with a sledgehammer **Leo Gallagher**

EXTRA:

1. “Coal Miner’s Daughter” and country singer **Loretta Lynn**
2. Star of *Murder, She Wrote* **Angela Lansbury**

**OSSAA 2022-2023
STATE GAME 3
SECOND QUARTER
60 SECOND QUESTIONS**

FINE ARTS - ART TERMS

Directions: Given a brief definition, identify the following art terms.

- | | |
|---------------------------------------------------------------------|------------------------------|
| 1. Arrangement of elements within a work of art | Composition |
| 2. Band of relief sculpture found on an entablature | Frieze |
| 3. Technique of thickly laying on paint to create texture | Impasto |
| 4. Space around and between objects in a painting | <u>Negative Space</u> |
| 5. Area in a painting that appears farthest away from viewer | Background |
| 6. Funny drawing of a person with exaggerated or distorted features | Caricature |
| 7. Opaque watercolor paint | Gouache |
| 8. Quality of a material that allows it to be hammered or rolled | Malleability |
| 9. Large painting applied to a wall in a public space | Mural |
| 10. Range of colors used by an artist in a work | Palette |

EXTRA:

- | | |
|----------------------------------------------------------|---------------------|
| 1. French art technique which translates as chewed paper | Papier-mâché |
| 2. A copy or reproduction of a work of art | Replica |

**OSSAA 2022-2023
STATE GAME 3
SECOND QUARTER
60 SECOND QUESTIONS**

SCIENCE - BRANCHES OF SCIENCE

Directions: Identify the name used for each of the following branches of science given what someone would be studying in this field. Use the specific name whenever possible.

- | | | |
|-----|---------------------------------------|----------------------|
| 1. | Study of human societies and cultures | Anthropology |
| 2. | Study of the kidneys | Nephrology |
| 3. | Study of weather | Meteorology |
| 4. | Motion and behavior of projectiles | Ballistics |
| 5. | Internal secretory glands | Endocrinology |
| 6. | Prehistoric environments | Paleoecology |
| 7. | Underground water | Hydrogeology |
| 8. | Exploration of caves | Speleology |
| 9. | Vocal sounds | Phonology |
| 10. | Study of the mouth | Stomatology |

EXTRA:

- | | | |
|----|---------------------------|---------------------|
| 1. | Fossils and ancient life | Paleontology |
| 2. | Rocks and their formation | Petrology |

**OSSAA 2022-2023
STATE GAME 3
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

21. At the end of this famous dystopian novel, the protagonist has become the human backup copy of the book of Ecclesiastes. Which novel begins with the line "It was a pleasure to burn?"

Answer: Fahrenheit 451

22. This man has more than 110 million subscribers on YouTube and rose to fame through his Let's Play videos from his home in Gothenburg, Sweden. Name this content creator who has semi-retired and moved to Japan with his wife.

Answer: Felix Arvid Ulf Kjellberg (or PewDiePie)

23. This ferry, probably the most recognizable in the U.S., shuttles 22 million passengers each year across New York Harbor. What is the name of this ferry which offers views of the Statue of Liberty and Ellis Island?

Answer: Staten Island Ferry

24. When neither of these candidates received more than 50% of the vote for senator, a runoff was scheduled for December 6th, 2022. Name the two candidates who competed for the junior senate seat for Georgia.

Answer: Raphael Warnock and Herschel Walker

25. The painting *View of Toledo* features a city in this country. In which country did Greek artist Domenikos Theotokopoulos make his home?

Answer: Spain

26. This semiconducting device, first developed by Shockley, Brattain, and Bardeen in 1947, regulates the current or voltage in a machine. Name this electronic component that replaced vacuum tubes in computers in the 1940s and 50s.

Answer: Transistor

27. Plays by this southern playwright include *Suddenly, Last Summer* and *The Night of the Iguana*. Which man won Pulitzer Prizes in 1948 and 1955, the latter for *Cat on a Hot Tin Roof*?

Answer: Tennessee Williams

OSSAA 2022-2023
STATE GAME 3
THIRD QUARTER
TOSS UP QUESTIONS

- | | Team One | Team Two |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 28. | This class of bryophyte is defined by its dorsiventral symmetry, one chloroplast per cell, and immersed gametangia. Name this class of bryophyte that has an elongated horn-like sporophyte.

Answer: Hornwort

_____ | |
| 29. | This man ruled Spain from 1939 until his death in 1975. Name this Spanish dictator who gained power after his Nationalist forces overthrew the Spanish democratic republic in the Spanish Civil War.

Answer: Francisco Franco

_____ | |
| 30. | An ESPN poll named this man the greatest US soccer player of all time. Name this man who is the all-time leader in assists and scoring for the United States men's national team.

Answer: Landon Donovan

_____ | |
| 31. | In musical notation, this dynamic marking consists of an angle which opens to the right under the musical staff. What is the player or singer being instructed by this dynamic mark to do?

Answer: Crescendo (get louder)

_____ | |
| 32. | In geometry, which theorem states that if two angles of two different triangles are congruent, then the other angles also must be congruent?

Answer: Third angle theorem

_____ | |
| 33. | Phillip Sydney's collection titled <i>Astrophel and Stella</i> contains 108 poems in this format. Which poem form is also used 154 times in the poetry of William Shakespeare?

Answer: Sonnet

_____ | |
| 34. | Science computation: What is the molecular formula for Copper II [two] sulfate?

Answer: CuSO₄ [C U S O 4]

_____ | |

OSSAA 2022-2023
STATE GAME 3
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

35. This island is the 4th largest island in the Mediterranean. Which island was the birthplace of Napoleon Bonaparte?

Answer: Corsica

36. This singer appeared as a member of Big Brother and the Holding Company at the Monterey International Pop Festival in 1967. Which woman died of a heroin overdose after recording a cover of Kris Kristofferson's song "Me and Bobby McGee" that reached number one?

Answer: Janis Joplin

37. The Cloud Gate sculpture, nicknamed The Bean, can be seen in this park in Chicago. Which park is connected with Maggie Daley Park by architect Frank Gehry's BP Pedestrian Bridge?

Answer: Millennium Park

38. **Math Computation:** There are 7 dimes, 12 nickels, and 13 pennies in a bag. What is the probability that a dime, then a nickel will be drawn forth, after replacing the dime? Make sure to reduce your ratio.

Answer: 21/256

39. This queen from Greek mythology makes an appearance in Shakespeare's play *A Midsummer Night's Dream*. Which woman was queen of the Amazons and owned a girdle that became one of the labors of Hercules?

Answer: Hippolyta

40. Factors that affect the thickness of this layer of water include tides, currents, seasonal weather changes, distance from the equator, and depth of the water itself. What is this region of the ocean or other large body of water where the temperature of the water changes drastically with the depth of the water?

Answer: Thermocline (or thermal layer)

**OSSAA 2022-2023
STATE GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

U.S. HISTORY - POTPOURRI

Directions: From the information given, identify the following concerning U.S. history

- | | |
|------------------------------------------------------------------|-------------------------------------------|
| 1. City of 1955 bus boycott led by Martin Luther King, Jr. | Montgomery |
| 2. Treaty that ended the Mexican-American War | Treaty of <u>Guadalupe Hidalgo</u> |
| 3. Largest Native American tribe in U.S. | Cherokee |
| 4. City in which Father Junipero Serra founded his first mission | San Diego |
| 5. Original capital of the United States | Philadelphia |
| 6. Secretary of State under Nixon who won Peace Prize in 1973 | Henry <u>Kissinger</u> |
| 7. The date that will live in infamy according to FDR | <u>December 7, 1941</u> |
| 8. Name of Lyndon Johnson's domestic policy | The <u>Great Society</u> |
| 9. Director of the FBI from 1924 to 1972 | J. Edgar <u>Hoover</u> |
| 10. Man who assassinated Robert Kennedy in 1968 | Sirhan <u>Sirhan</u> |

EXTRA:

- | | |
|------------------------------------------------------------------|------------------------------------|
| 1. 1962 confrontation between U.S. and Soviet Union | <u>Cuban Missile Crisis</u> |
| 2. Land deal that gained land not granted in Treaty of Guadalupe | <u>Gadsden Purchase</u> |

**OSSAA 2022-2023
STATE GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

FINE ARTS - PORTRAIT PAINTERS

Directions: Given the title of a famous portrait, name the artist.

- | | |
|------------------------------------|-----------------------------------------|
| 1. Mona Lisa | Leonardo <u>da Vinci</u> |
| 2. The Milkmaid | Johannes <u>Vermeer</u> |
| 3. The Blue Boy | Thomas <u>Gainsborough</u> |
| 4. Portrait of Madame X | John Singer <u>Sargent</u> |
| 5. Self Portrait with Straw Hat | Vincent <u>van Gogh</u> |
| 6. Portrait of Adele Bloch Bauer I | Gustav <u>Klimt</u> |
| 7. The Two Fridas | Frida <u>Kahlo</u> |
| 8. Napoleon Crossing the Alps | Jacques Louis <u>David</u> |
| 9. The Arnolfini Portrait | Jan <u>van Eyck</u> |
| 10. Henry VIII | Hans <u>Holbein, the Younger</u> |

EXTRA:

- | | |
|------------------------|-------------------------------------|
| 1. Lady with an Ermine | Leonardo <u>da Vinci</u> |
| 2. Paul Revere | John Singleton <u>Copley</u> |

**OSSAA 2022-2023
STATE GAME 3
FOURTH QUARTER
60 SECOND QUESTIONS**

CALCULUS - LIMITS AS X APPROACHES ZERO

Directions: Find the limits of each of the following expressions as x approaches zero.

- | | | |
|-----|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 1. | sine x | 0 |
| 2. | $5x^3 + 8$ [5 x cubed plus 8] | 8 |
| 3. | $(\sin x) / x$ [sine x over x] | 1 |
| 4. | $(5x^2 + 24) / (10x^2 - 6)$ [the quantity 5 x squared plus 24 end quantity over the quantity 10 x squared minus 6] | -4 |
| 5. | $(9x^3 + 28) / (3x^3 + 7)$ [the quantity 9 x cubed plus 28 end quantity over the quantity 3 x cubed plus 7] | 4 |
| 6. | $(24x^4 + 18) / (8x^4 - 3)$ [the quantity 24 x to the fourth plus 18 end quantity over the quantity 8 x to the fourth minus 3] | -6 |
| 7. | $(4x^5 - 25) / (12x^5 + 15)$ [the quantity 4 x to the fifth minus 25 end quantity over the quantity 12 x to the fifth plus 15] | -5/3 (or -1&2/3) |
| 8. | $(40x^7 - 51) / (8x^6 + 6)$ [the quantity 40 x to the seventh minus 51 end quantity over the quantity 8 x to the sixth plus 6] | -17/2 (or -8&1/2 or -8.5) |
| 9. | $\sec^2 x$ [secant squared x] | 1 |
| 10. | $(49x^5 + 169) / (14x^5 + 26)$ [the quantity 49 x to the fifth plus 169 end quantity over the quantity 14 x to the fifth plus 26] | 13/2 (or 6&1/2 or 6.5) |

EXTRA:

- | | | |
|----|------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1. | $(16x^4 - 45) / (12x^5 - 25)$ [the quantity 16 x to the fourth minus 45 end quantity over the quantity 12 x to the fifth minus 25] | 9/5 (or 1&4/5 or 1.8) |
| 2. | $6x^{-3} + 11$ [6 x to the negative third plus 11] | Infinity |

OSSAA 2022-2023
STATE GAME 3
EXTRA QUESTIONS

Extra:

- E1. In 2008, the Seattle Supersonics were moved to a new state and changed their name to reflect their new home. Which current NBA team was formerly located in Seattle?

Answer: Oklahoma City Thunder

Team One **Team Two**

- E2. **Math Computation:** The vertex angle in an isosceles triangle measures $(x + 8)$ degrees, while a base angle measures $(x + 11)$ degrees. What is the value of x ?

Answer: $(x=) 50$

- E3. Mycophobia is a fear of these edible fungi. A fear of what food item might make it hard to eat a chanterelle?

Answer: Mushrooms

- E4. This man was named the 2022 AL Most Valuable Player, having led the league in RBIs and homeruns and finishing second in batting average. Which Yankee player hit 62 homeruns for the season, breaking the AL record in the process?

Answer: Aaron Judge

- E5. These three words make up the motto of the Federal Bureau of Investigation. Which three words begin with the letters that make up the shortened version commonly used to identify this government agency?

Answer: Fidelity, Bravery, Integrity

- E6. **Math Computation:** Convert 4.5 miles into yards.

Answer: 7920

- E7. This type of order is usually issued to compel a witness to testify in court. What type of order have many members of the former administration attempted to defy?

Answer: Subpoena

**OSSAA 2022-2023
STATE GAME 3
EXTRA QUESTIONS**

Team One Team Two

- E8. This androgen hormone is vital for the development of reproductive tissue in males, as well as causing secondary sexual characteristics like increased body hair and muscle mass. Which steroid also influences moods, behaviors, and bone growth?

Answer: Testosterone

_____ _____

- E9. This spice comes from the seed of a tropical evergreen native to the Spice Islands of Indonesia. What is this spice used in eggnog and pumpkin pie?

Answer: Nutmeg

_____ _____

- E10. Cells use this process to export molecules that have been modified by the Golgi apparatus. In which process does a vesicle containing a large molecule fuse with the cell membrane then split open to the outside, allowing the molecule to pass out of the cell?

Answer: Exocytosis

_____ _____

**OSSAA 2022-2023
STATE GAME 4
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

1. This man was elected the Republican leader of the U.S. Senate after the November 2022 general elections. Name this Kentuckian who defeated a challenge from Senator Rick Scott of Florida.

Answer: Mitch McConnell

2. The book *Out of the Dust* by Karen Hesse is set in this U.S. state. Which state is the setting for this Newbery Medal Winner about the Dust Bowl?

Answer: Oklahoma

3. This measure is sometimes abbreviated EPD by ecologists. What is this measure of the number of individuals of a population in a given area of habitat?

Answer: Ecological population density

4. This small town, founded on the site of an 1890 massacre, was occupied by AIM protestors in 1973. Which town was under siege for 71 days as federal officers attempted to remove the protestors from the town on the Pine Ridge Reservation?

Answer: Wounded Knee

5. This CBS TV show premiered in October 2022, with almost 6 million viewers. Name this show about a young convict who volunteers to work with the California Department of Forestry and Fire Protection putting out blazes near his northern California hometown.

Answer: Fire Country

6. This collective name refers to the gods of the ancient Shinto religion of Japan. What is this name for the sacred spirits who take the form of things such as wind, rain, mountains, and trees?

Answer: Kami

7. **Math Computation:** How much simple interest is earned on \$1100 at 2.5% interest for 8 years?

Answer: \$220

**OSSAA 2022-2023
STATE GAME 4
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

8. The Disney movie "Tangled" is a happier retelling of this fairy tale. In which fairy tale by the Brothers Grimm does a pregnant woman who craves rampion from a garden end up losing her daughter to the witch who owns the garden?

Answer: Rapunzel

_____ _____

9. This structure of the ovaries in mammals produces progesterone. Name this remnant of an ovarian follicle that has already released a mature egg during a previous ovulation.

Answer: Corpus luteum [lu'te-um]

_____ _____

10. In 1990, this man won Poland's first direct presidential election by a landslide. Which man won the 1983 Nobel Peace Prize for his work with Solidarity, Poland's first independent trade union?

Answer: Lech [Lek] Waleśa [vah-WENZ-ah]

_____ _____

11. In 2022, this man bought a company and immediately banned remote work, fired half the staff, and insisted that half the revenue should come from paid subscriptions. Name this billionaire who wants to charge users for the blue check verification for their tweets.

Answer: Elon Musk

_____ _____

12. Itzhak Perlman, Yehudi Menuhin, and Niccolo Paganini are all known for mastery of this instrument. Which orchestral instrument is probably the best known and most widely distributed musical instrument in the world?

Answer: Violin

_____ _____

13. **Math Computation:** Multiply the following binomials and simplify your answer: $(x - 3)(3x + 2)(x + 3)$ [the quantity x minus 3 end quantity times the quantity $3x$ plus 2 end quantity times the quantity x plus 3].

Answer: $3x^3 + 2x^2 - 27x - 18$ [3 x cubed plus 2 x squared minus 27x minus 18] {terms may be in any order}

_____ _____

OSSAA 2022-2023
STATE GAME 4
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

14. This historical period in literature and music specifically focused more on emotions than reason and logic. Which period occurred during the late 18th and early 19th centuries?

Answer: Romantic

15. **Science computation:** A watermelon is dropped from the top of a building hitting the ground after 4.0 seconds. Assuming gravity is 10 meters per second squared and using the equation $\Delta x = 1/2at^2$ [delta x equals one half a t squared], how high was the top of the building in meters?

Answer: 80

16. This U.S. city was the site of the 1904 World Fair. In which city can you visit Busch Stadium and the Gateway Arch?

Answer: St. Louis, Missouri

17. In 1990, at the age of 16, this woman became the youngest French Open singles champion, winning eight Grand Slam singles titles while still a teenager. Which Yugoslavian tennis player's career was derailed when she was attacked on-court by a knife-wielding superfan of Steffi Graf?

Answer: Monica Seles

18. This architect designed the Rock and Roll Hall of Fame in Cleveland, Ohio. Which architect also designed the pyramid at the entrance to the Louvre Museum in Paris?

Answer: I. M. Pei

19. **Math Computation:** Find: $\sin 75$ [sine of 75 degrees], by using the sum formula for two angles, $\sin(A + B) = \sin A \cos B + \cos A \sin B$ [sine of the quantity A plus B end quantity equals sine A cosine B plus cosine A sine B]. Express your answer as one fraction with radicals.

Answer: $(\sqrt{6} + \sqrt{2}) / 4$ [(the quantity) radical 6 plus radical 2 (end quantity) over 4]

20. In Greek mythology, this creature belonged to Zeus and guarded the gold of the north. Which creature was half eagle and half lion?

Answer: Griffin

**OSSAA 2022-2023
STATE GAME 4
SECOND QUARTER
60 SECOND QUESTIONS**

ANATOMY - HUMAN BODY EXTREMES

Directions: Identify the following about the largest or smallest anatomical objects in the human body.

- | | | |
|-----|--------------------------------|----------------------------|
| 1. | Largest bone in the human body | Femur |
| 2. | Smallest bone in the body | Stapes (or stirrup) |
| 3. | Largest muscle | Gluteus maximus |
| 4. | Longest muscle | Sartorius |
| 5. | Largest organ | Skin |
| 6. | Smallest organ | Pineal gland |
| 7. | Longest tendon | Achilles |
| 8. | Longest rib | <u>Seventh</u> rib |
| 9. | Longest ligament | Long plantar |
| 10. | Smallest muscle | Stapedius |

EXTRA:

- | | | |
|----|--------------------------|-----------------------------------|
| 1. | Shortest rib | <u>12th</u> rib |
| 2. | Largest bone in the foot | Calcaneus |

**OSSAA 2022-2023
STATE GAME 4
SECOND QUARTER
60 SECOND QUESTIONS**

COMPUTER SCIENCE - BASE 10 TO BINARY

Directions: Convert each of the following base 10 numbers into binary form. [Moderator – all answers will be ones and zeros]

1.	28	11100 [one one one zero zero]
2.	35	100011
3.	31	11111
4.	36	100100
5.	52	110100
6.	54	110110
7.	78	1001110
8.	93	1011101
9.	101	1100101
10.	115	1110011

EXTRA:

1.	123	1111011
2.	144	10010000

**OSSAA 2022-2023
STATE GAME 4
SECOND QUARTER
60 SECOND QUESTIONS**

HUMANITIES - NORSE MYTHOLOGY

Directions: From the information given, identify the following from Norse mythology. Answers should be based on actual Norse mythology and not the Marvel universe version.

- | | | |
|-----|-----------------------------------------------------|------------------------|
| 1. | Giant who was the first living being | Ymir |
| 2. | Two major clans of Norse gods | Aesir and Vanir |
| 3. | Ruler of Asgard | Odin |
| 4. | Name of the World Tree | Yggdrasil |
| 5. | Queen of Asgard and mother of Balder | Frigg |
| 6. | Name of Thor's hammer | Mjollner |
| 7. | Son of Odin who sat atop the Bifrost | Heimdall |
| 8. | Name for the world of humanity | Midgard |
| 9. | Norse god of war and law for who Tuesday is named | Tyr (or Tiwaz) |
| 10. | Son of the giant Farbauti and blood brother of Odin | Loki |

EXTRA:

- | | | |
|----|-----------------------------------------------------|----------------------|
| 1. | Baldur's blind twin brother who was tricked by Loki | Hod (or Hodr) |
| 2. | Goddess of death who presided over Norse underworld | Hel |

**OSSAA 2022-2023
STATE GAME 4
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

21. This man's book, *Experimental Studies of Intelligence*, was published in 1903 and described his methods of separating normal children from abnormal. Name this man who, along with Theodore Simon, created an intelligence test to determine the mental age of children between the ages of 3 and 13.

Answer: Alfred Binet

22. This lake in south central Oklahoma is Oklahoma's second-largest lake and a hot spot for sand bass fishing. Which lake does Oklahoma share with Texas?

Answer: Lake Texoma

23. In September 2022, this super typhoon formed near Iwo Jima and swung toward Okinawa before hitting the Japanese island of Kyushu. Which typhoon caused the evacuation of more than 500,000 people in Japan when a "special warning" was issued to any island other than Okinawa.

Answer: Typhoon Nanmadol

24. A spanakopita is a Greek pie featuring this vegetable. Which green vegetable is rich in Vitamins A and K?

Answer: Spinach

25. This term is generic for any internet publication edited by its own audience directly using a web browser. Name this type of web page, of which Wikipedia is the largest, with more than 6 million articles.

Answer: Wiki

26. This word of Greek origin is defined as a false name. What is this word most often associated with pen names used by authors?

Answer: Pseudonym

27. This molecule is the electron carrier that delivers high-energy electrons required to create carbon-hydrogen bonds in the third stage of photosynthesis. Which molecule is generated by Ferredoxin-NADP+ reductase, or FNR, when electrons are transferred from two ferredoxin molecules?

Answer: NADPH (or nicotinamide adenine dinucleotide phosphate)

**OSSAA 2022-2023
STATE GAME 4
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

28. This U.S. president is the only one to take the oath of office on Air Force One. Name this native of Texas who succeeded John F. Kennedy as president.

Answer: Lyndon Baines Johnson

_____ _____

29. This 2022 movie is a sequel of a 1993 film starring Bette Midler, Sarah Jessica Parker, and Kathy Najimy. Name this film in which the witches Winifred, Mary, and Sarah are resurrected by another Black Flame Candle.

Answer: Hocus Pocus 2

_____ _____

30. In finance, this accounting term is the opposite of an asset. What five-syllable word indicates something a company owes, usually a sum of money?

Answer: Liability

_____ _____

31. **Math Computation:** Points A, B, and C lie on circle D, such that point B is on the interior of major arc AC. If arcs AB and BC are 83 and 135 degrees, what is the measure of inscribed angle ABC in degrees?

Answer: 71

_____ _____

32. According to legend, Robin Hood and his Merry Men spent most of their time in this fictional location. What was the name of the fictional wooded area where Robin had his home base?

Answer: Sherwood Forest

_____ _____

33. This ancient Greek thinker estimated the circumference of the Earth to within 40 miles by measuring the distance between Alexandria and Syene and the angles formed by shadows at noon on a summer day. Name this geometrician who was off by only 1% on his calculations.

Answer: Eratosthenes

_____ _____

34. This battleship, the last built by the U.S., was launched in 1944 and provided gunfire support at Iwo Jima and Okinawa. Which battleship now serves as a museum at Pearl Harbor?

Answer: USS Missouri

_____ _____

**OSSAA 2022-2023
STATE GAME 4
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

35. This man started at the 2022 U.S. Grand Prix in the second spot on the grid before cruising to victory ahead of Lewis Hamilton. Name this Formula 1 driver for Red Bull Racing who drives car number 1.

Answer: Max Verstappen

36. Toward the end of his career, this French artist switched from painting to collage using paper cut-outs. Which artist's cut-out works include *The Snail* and *Icarus*?

Answer: Henri Matisse

37. **Math Computation:** How many ounces are there in 4 tons?

Answer: 128000

38. In this play, the blind prophet Tiresias informs the title character that he has murdered his own father. In which famous play does a king discover that the murderer he has vowed to find is himself, and he has also married his own mother?

Answer: Oedipus Rex

39. **Science computation:** Use Gay-Lussac's Law to find the final temperature of a gas held at constant volume if the gas was originally at 400 kilopascals and 450 Kelvin before being pressured to 600 kilopascals. Put your answer in Kelvin.

Answer: 675

40. In 1917, this group overthrew the Russian government and later became the Communist Party of the Soviet Union. Which group was led by Vladimir Lenin?

Answer: Bolsheviks

**OSSAA 2022-2023
STATE GAME 4
FOURTH QUARTER
60 SECOND QUESTIONS**

SCIENCE COMPUTATION - METRIC CONVERSION

Directions: For each of the following, convert from the given units into the requested units. Make sure to put your answer in correct scientific notation. {Moderator – read 2.3×10^{-2} as 2 point 3 times ten to the negative second]

1.	25 millimeters into meters	2.5×10^{-2}
2.	32 megameters into meters	3.2×10^7
3.	18 centimeters into meters	1.8×10^{-1}
4.	42 gigameters into meters	4.2×10^{10}
5.	25 nanometers into meters	2.5×10^{-8}
6.	674 micrometers into meters	6.74×10^{-4}
7.	21 meters into hectometers	2.1×10^{-1}
8.	142 terameters into meters	1.42×10^{14}
9.	62 meters into picometers	6.2×10^{13}
10.	13 dekameters into meters	1.3×10^2

EXTRA:

1.	231 meters into decimeters	2.31×10^3
2.	13 meters into femtometers	1.3×10^{16}

**OSSAA 2022-2023
STATE GAME 4
FOURTH QUARTER
60 SECOND QUESTIONS**

GEOGRAPHY - U.S. HISTORIC SITES

Directions: Given the name of a U.S. historic site, name the state in which it is located.

- | | | |
|-----|----------------------------------------------|---------------------|
| 1. | Edmund Pettus Bridge | Alabama |
| 2. | Portland Head Lighthouse | Maine |
| 3. | Lake Itasca, headwaters of Mississippi River | Minnesota |
| 4. | Dodge City | Kansas |
| 5. | Theodore Roosevelt birthplace | New York |
| 6. | Largest Mormon temple | Utah |
| 7. | Allegheny Portage Railroad | Pennsylvania |
| 8. | Tuskegee Institute | Alabama |
| 9. | Manzanar War Relocation Center | California |
| 10. | Fort Laramie | Wyoming |

EXTRA:

- | | | |
|----|-------------------------|-----------------|
| 1. | Appomattox Court House | Virginia |
| 2. | Heavener Runestone Park | Oklahoma |

**OSSAA 2022-2023
STATE GAME 4
FOURTH QUARTER
60 SECOND QUESTIONS**

LITERATURE - NOTABLE AUTHORS OF THE 19TH CENTURY

Directions: Given the title of a work by a notable author of the 19th century, give the first and last name of the author.

1. Leaves of Grass Walt Whitman
2. Rip Van Winkle Washington Irving
3. The Raven Edgar Allan Poe
4. Moby Dick Herman Melville
5. Self-Reliance Ralph Waldo Emerson
6. Civil Disobedience Henry David Thoreau
7. How the Other Half Lives Jacob Riis
8. On the Origin of Species Charles Darwin
9. The Scarlet Letter Nathaniel Hawthorne
10. The Ballad of Reading Gaol Oscar Wilde

EXTRA:

1. The Adventures of Huckleberry Finn Mark Twain (or Samuel Clemens)
2. Emma Jane Austen

OSSAA 2022-2023
STATE GAME 4
EXTRA QUESTIONS

Extra:

- E1. What percentage of a normally distributed data set lies within two standard deviations of the mean?

Answer: 95

Team One **Team Two**

- E2. This Broadway musical, based on the Peanuts comic strip, premiered in 1967. Which musical featured the songs *My Blanket and Me*, *The Doctor Is In*, and *Beethoven Day*?

Answer: You're a Good Man, Charlie Brown

- E3. The first game in this competition took place November 20th, 2022, and featured teams from Ecuador and Qatar. Name this tournament presided over by FIFA [fee-fah] and held every four years.

Answer: World Cup

- E4. Johnny Cash's song "A Boy Named Sue" was written by this poet famous for his children's poems. Which author's poetry collections include *Where the Sidewalk Ends* and *A Light in the Attic*?

Answer: Shel Silverstein

- E5. During this process, one molecule of glucose is converted into two molecules of pyruvic acid while producing two molecules of ATP. What is this metabolic pathway that takes place in the cytosol of the cells of living organisms?

Answer: Glycolysis

- E6. This largest nation in southeast Asia is an archipelago that lies across the Equator. Which nation includes the islands of Java, Sumatra, and Borneo?

Answer: Indonesia

- E7. **Math Computation:** Solve for H: $(12H + 31) / 7 = 14$ [the quantity 12H plus 31 end quantity over 7 equals 14]

Answer: (H=) 67/12 (or 5&7/12)

**OSSAA 2022-2023
STATE GAME 4
EXTRA QUESTIONS**

Team One Team Two

- E8. This English contemporary sculptor is known for his works which include dead animals in a formaldehyde solution. Which artist used a sheep in his 1994 work *Away From the Flock*?

Answer: Damien Hirst

- E9. **Science computation:** A canoe is being paddled at 1.5 miles per hour across a river, while the current pushes the canoe downstream at a speed of 0.8 miles per hour. What is the resultant speed of the canoe in miles per hour?

Answer: 1.7

- E10. This French phrase means "to let alone." Which phrase is used to indicate the doctrine that governments should not interfere in business?

Answer: Laissez Faire

**OSSAA 2022-2023
STATE GAME 5
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

1. A lexicographer is someone who compiles this type of book. Which book of words is created by a lexicographer?

Answer: Dictionary

_____ _____

2. **Math Computation:** Divide the following binomials by rationalizing the denominator: $(3 + i) / (5 - i)$ [the quantity 3 plus i over the quantity 5 minus i]. Make sure to simplify your answer and put it in A plus B-I form.

Answer: $7/13 + 4/13 i$ [7 over 13 plus 4 over 13 i]

_____ _____

3. This 4-syllable word applies to foods such as coffee and cocoa, whose production does not degrade the environment. What is this term beginning with S?

Answer: Sustainable

_____ _____

4. **Science computation:** Convert 1.2 kilowatts into deciwatts

Answer: 12000 deciwatts (or 1.2×10^4)

_____ _____

5. This 6-letter word is defined as anyone who acts as a voluntary guide in a museum, art gallery, or zoo. What is this term beginning with D?

Answer: Docent

_____ _____

6. A Halloween stampede in this city caused the deaths of more than 150 people in 2022. Name this city where more than 100,000 young people had gathered in the Itaewon district famous for its nightclubs.

Answer: Seoul

_____ _____

7. This type of veto occurs when the president fails to sign a bill before the end of the legislative session. What is the name for this type of indirect veto?

Answer: Pocket veto

_____ _____

**OSSAA 2022-2023
STATE GAME 5
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

8. **Math Computation:** Find the first derivative of the expression: $7x^{-3} - 8x^{-4}$ [7 x to the negative third minus 8 x to the negative fourth]. Leave your answer with negative powers.

Answer: $-21x^{-4} + 32x^{-5}$ [negative 21 x to the negative fourth plus 32 x to the negative fifth]

9. The religion founded by this Protestant religious reformer includes the doctrine of predestination. Which reformer was based in Geneva during the Protestant Reformation?

Answer: John Calvin

10. Examples of these are testosterone, dihydrotestosterone, and androstenedione. Which class of steroid hormones regulates the development of male secondary sex characteristics and the primary sex organs?

Answer: Androgens

11. This submarine plays an integral part in the novel *Twenty Thousand Leagues Under the Sea*. What is the name of the submarine built by Captain Nemo?

Answer: The Nautilus

12. This singer passed away in October 2022 at his home in Nesbit, Mississippi. Name this rock and roll and rockabilly pioneer with the immortal hits “Whole Lotta Shakin’ Goin’ On” and “Great Balls of Fire.”

Answer: Jerry Lee Lewis

13. The woodcut featuring a segmented snake, which appeared during the American Revolution, had this three-word slogan. Which slogan was meant to encourage colonists to participate in the war?

Answer: Join or Die

14. **Math Computation:** Two chords intersect inside a circle. If the intercepted arcs from these chords measure 46 and 122 degrees, what is the measure, in degrees, of the angle formed by these chords?

Answer: 84

**OSSAA 2022-2023
STATE GAME 5
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

15. The middle period of this Dutch artist's career includes his panoramic triptychs, such as *The Temptation of St. Anthony*. Which painter also created the triptych titled *The Garden of Earthly Delights*?

Answer: Hieronymus Bosch

_____ _____

16. **Science Computation:** How much heat energy, in joules, must be added to 5.00 grams of cadmium to raise the temperature of the cadmium by 6.00 degrees Kelvin? Use the specific heat of cadmium to be 0.232 joules per gram degree Kelvin. Remember, specific heat is heat energy divided by mass and change in temperature.

Answer: 6.96

_____ _____

17. According to a speech in a Shakespeare play, this man is "the noblest Roman" of all. Which title character met his end on the Ides of March?

Answer: Julius Caesar

_____ _____

18. This woman became the first female elected mayor of Los Angeles when she defeated Rick Caruso in the 2022 general election. Which woman served as the Chair of the Congressional Black Caucus in the U.S. House of Representatives?

Answer: Karen Bass

_____ _____

19. Members of this social class of the Roman empire were forbidden to assume political or priestly office or to marry into a higher class. What term, beginning with P, names this group made up of the common people of Rome?

Answer: Plebians

_____ _____

20. **Math Computation:** Solve the following logarithmic equation for x:
 $\log_3 5 + \log_3(2x - 1) = 4$ [log base 3 of 5 plus log base 3 of the quantity 2x minus 1 equals 4].

Answer: (x=) 8.6 (or 8&3/5 or 43/5)

_____ _____

**OSSAA 2022-2023
STATE GAME 5
SECOND QUARTER
60 SECOND QUESTIONS**

ECONOMICS - BUSINESS ACRONYMNS

Directions: Identify the full meanings of each of the following acronyms as they are used in business.

- | | |
|----------|-----------------------------------|
| 1. CFO | Chief financial officer |
| 2. HR | Human resources |
| 3. FIFO | First in, first out |
| 4. CPU | Cost per unit |
| 5. EFT | Electronic funds transfer |
| 6. MTD | Month to date |
| 7. LLC | Limited liability company |
| 8. ROIC | Return on invested capital |
| 9. LBO | Limited buy out |
| 10. RTTS | Real time tracking system |

EXTRA:

- | | |
|--------|---------------------------------|
| 1. NDA | Non-disclosure agreement |
| 2. QA | Quality assurance |

**OSSAA 2022-2023
STATE GAME 5
SECOND QUARTER
60 SECOND QUESTIONS**

HUMANITIES - OLD TESTAMENT PEOPLE ABCs

Directions: Given a brief description, identify the following people from the Old Testament of the Bible. Answers will be in alphabetical order, beginning with A and skipping the letters E and F.

- | | | |
|-----|---------------------------------------|-------------------|
| 1. | First high priest of the Jews | Aaron |
| 2. | Husband of Ruth | Boaz |
| 3. | Spy sent out by Moses to visit Canaan | Caleb |
| 4. | Hebrew prophetess and judge | Deborah |
| 5. | Philistine giant | Goliath |
| 6. | General slain by Judith | Holofernes |
| 7. | Son of Abraham and Hagar | Ishmael |
| 8. | Father of King David | Jesse |
| 9. | Father of Saul | Kish |
| 10. | Father of Leah and Rachel | Laban |

EXTRA:

- | | | |
|----|----------------------------|---------------|
| 1. | Sister of Aaron and Moses | Miriam |
| 2. | Cured of leprosy by Elisha | Naaman |

**OSSAA 2022-2023
STATE GAME 5
SECOND QUARTER
60 SECOND QUESTIONS**

LITERATURE - FAMOUS AMERICAN SHORT STORIES

Directions: Given the title of a famous short story by an American author, name the author.

- | | |
|--------------------------------------|----------------------------------------|
| 1. The Snows of Kilimanjaro | Ernest <u>Hemingway</u> |
| 2. The Open Boat | Stephen <u>Crane</u> |
| 3. The Fall of the House of Usher | Edgar Allan <u>Poe</u> |
| 4. Bartleby the Scrivener | Herman <u>Melville</u> |
| 5. A Good Man is Hard to Find | Flannery <u>O'Connor</u> |
| 6. Three-Ten to Yuma | Elmore <u>Leonard</u> |
| 7. The Monkey's Paw | W.W. <u>Jacobs</u> |
| 8. An Occurrence at Owl Creek Bridge | Ambrose <u>Bierce</u> |
| 9. A Diamond as big as the Ritz | F. Scott <u>Fitzgerald</u> |
| 10. The Yellow Wallpaper | Charlotte Perkins <u>Gilman</u> |

EXTRA:

- | | |
|----------------------------------|-----------------------------|
| 1. The Luck of Roaring Camp | Bret <u>Harte</u> |
| 2. The Bride Comes to Yellow Sky | Stephen <u>Crane</u> |

**OSSAA 2022-2023
STATE GAME 5
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

21. One of this composer's claims to fame was as the "Father of the String Quartet." Which composer wrote the symphony known as "The Surprise Symphony?"

Answer: Franz Joseph Haydn

22. This principle is defined as the apparent displacement of a nearby object, relative to the background, as an observer's location changes. Which principle is often used by astronomers when calculating distances in the galaxy?

Answer: Parallax

23. This type of irony occurs when the literal meaning of a statement is not the speaker's intended meaning. Sarcasm would be considered this type of irony.

Answer: Verbal

24. This man was named the 2022 NL Most Valuable Player and led the National League in slugging percentage. Who is this first baseman for the St. Louis Cardinals?

Answer: Paul Goldschmidt

25. This Portuguese royal is credited with initiating the Age of Exploration with his support of cartography. Which man never embarked on any exploratory voyages himself but did support explorations along the coast of Africa?

Answer: Prince Henry the Navigator

26. **Math Computation:** Six people, including Harley and Billie, want to be first in line. Given the students are chosen randomly, what is the fractional probability that Harley will be first and Billie will be second?

Answer: 1/30

27. This 18th century French architect is buried in Arlington National Cemetery. Which architect became the city planner for George Washington and designed the city that became Washington, D.C.?

Answer: Pierre L'Enfant

OSSAA 2022-2023
STATE GAME 5
THIRD QUARTER
TOSS UP QUESTIONS

Team One Team Two

28. If enough oxygen is not available during cellular respiration, this process occurs instead. In which process is the pyruvate converted to lactic acid, oxidizing NADH to NAD⁺ so that glycolysis can continue without oxygen?

Answer: Lactic acid fermentation

29. The term "sour grapes" comes from a story found in a collection by this man. Which man included the story of the Fox and the Grapes in his works?

Answer: Aesop

30. The creed for this organization includes the line "I believe in leadership from ourselves and respect from others." Name this organization established in Kansas City in 1928 to encourage more young people to go into farming.

Answer: National FFA Organization

31. In 1933, this Prohibition-era gangster and his wife kidnapped oil tycoon Charles F. Urschel in Oklahoma City and held him for ransom. Which gangster was known for the type of firearm he was known to carry?

Answer: Machine Gun Kelly (George Kelly Barnes)

32. **Math Computation:** Solve the following system of equations using elimination: $2x + 4y = 4$ and $-2x + 3y = -11$. Express your answer as coordinates, (x, y) [x comma y].

Answer: (4, -1)

33. Varieties of this snack item come in Liguria, Castelvetrano, and Kalamata. What are these small food items sometimes found on pizza?

Answer: Olives

34. **Science computation:** What is the magnitude of the net force acting on an object if one force pushes upward at 24.0 Newtons and another force pushes right at 45.0 Newtons? Make sure to express your answer in Newtons with the correct number of significant digits.

Answer: 51.0 {must have the zero}

**OSSAA 2022-2023
STATE GAME 5
THIRD QUARTER
TOSS UP QUESTIONS**

- | | Team One | Team Two |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| 35. When Abraham Lincoln gave his most famous speech, he talked about a measurement of four score, which is a multiple of this number. How many units are in one score? | _____ | _____ |
| Answer: 20 | | |
| 36. This actor played the title character in the CBS sitcom <i>Becker</i> and Arthur Frobisher on the FX show <i>Damages</i> . Name this actor who came to fame playing Sam Malone on the TV show <i>Cheers</i> . | _____ | _____ |
| Answer: Ted Danson | | |
| 37. This amendment to the U.S. Constitution provides for presidential succession in the event of a president's incapacity or removal from office. Which amendment provides for vice presidential succession to the presidency? | _____ | _____ |
| Answer: 25th | | |
| 38. Math Computation: How much interest is earned on a \$1000 savings account at 5% interest for 2 years, if interest is compounded annually? | _____ | _____ |
| Answer: \$102.50 | | |
| 39. Broadheads and quivers are equipment used in this sport. Which sport evolved from the Paleolithic period where it was used for hunting and warfare? | _____ | _____ |
| Answer: Archery | | |
| 40. In 1967, this man won 27 NASCAR races, 10 of them consecutive, and earned the pole position in a total of 123 races in his career. Which driver of car number 43 had 200 career victories, 95 more than the next highest person? | _____ | _____ |
| Answer: Richard Petty | | |

**OSSAA 2022-2023
STATE GAME 5
FOURTH QUARTER
60 SECOND QUESTIONS**

POETRY - FIRST LINES OF POEMS

Directions: Given the first line of a famous poem, name the author of the poem.

1. When I consider everything that grows William Shakespeare
 2. Ay, tear her tattered ensign down! Oliver Wendell Holmes
 3. When we two parted in silence and tears George Gordon, Lord Byron
 4. The sea is calm tonight Matthew Arnold
 5. Half a league, half a league, half a league onward Alfred, Lord Tennyson
 6. Not like the brazen giant of Greek fame Emma Lazarus
 7. The world is too much with us, late or soon William Wordsworth
 8. We wear the mask that grins and lies Paul Laurence Dunbar
 9. I was angry with my friend William Blake
 10. Come live with me and be my love Christopher Marlowe

EXTRA:

1. Death be not proud, though some have called thee **John Donne**
 2. You may write me down in history **Maya Angelou**

**OSSAA 2022-2023
STATE GAME 5
FOURTH QUARTER
60 SECOND QUESTIONS**

SCIENCE - CHEMISTRY LAWS

Directions: You will be given the description of a law or principle used in a chemistry class. Identify the name of the law or principle.

- Two systems in thermal equilibrium with a third are in equilibrium with each other **Zeroth Law of Thermodynamics**
 - Pressure times volume is directly proportional to temperature times number of molecules **Ideal Gas Law**
 - Total energy of universe is constant and cannot be created or destroyed **First Law of Thermodynamics (or Conservation of Energy)**
 - Physical and chemical properties of elements are predictable when elements are listed in atomic number order **Periodic Law**
 - Electrons in same atom cannot have same four quantum numbers **Pauli Exclusion Principle**
 - An electron will occupy lowest available energy orbital **Aufbau Principle**
 - Overall enthalpy change of a reaction is equal to sum of individual enthalpy changes for steps in a process **Hess's Law**
 - Chemical compounds tend to move toward electrons in highest occupied energy level **Octet Rule**
 - System at equilibrium disturbed by stress, achieves new equilibrium position that minimizes stress **LeChatlier's Principle**
 - Gram-atomic heat capacity of an element is a constant **Dulong-Petit Law**

EXTRA:

1. Equal volumes of gases at same temperature and pressure contain equal number of particles **Avogadro's Law**
 2. The proportions of elements in a compound are fixed **Law of Definite Proportions**

**OSSAA 2022-2023
STATE GAME 5
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH - SOLVING SIMPLE TRIG EQUATIONS

Directions: Solve each of the following simple trig equations for x. Make sure to give all possible answers in degrees, with answers between 0 and 360.

- | | | |
|-----|--------------------------------------------------------------------|--------------------------|
| 1. | $\cos x = 1/2$ [cosine x equals one half] | 60, 300 |
| 2. | $\tan x = \sqrt{3}/3$ [tangent x equals radical 3 over 3] | 30, 210 |
| 3. | $\cos x = -\sqrt{2}/2$ [cosine x equals negative radical 2 over 2] | 135, 225 |
| 4. | $\sin x + 1/2 = 0$ | 210, 330 |
| 5. | $\cot x - 1 = 0$ | 45, 225 |
| 6. | $\tan^2 x = 3$ | 60, 120, 240, 300 |
| 7. | $\secant x = -2\sqrt{3}/3$ [negative 2 radical 3 over 3] | 150, 210 |
| 8. | $\csc x + \sqrt{2} = 0$ | 225, 315 |
| 9. | cotangent is undefined | 90, 270 |
| 10. | $\csc^2 x = 2$ [cosecant squared x equals two] | 45, 135, 225, 315 |

EXTRA:

- | | | |
|----|-------------------------------------------------------------------|-------------------|
| 1. | $\sin^2 x - \sin x = 0$ [sine squared x minus sine x equals zero] | 0, 90, 180 |
| 2. | $\cot x - \sqrt{3}/3 = 0$ | 60, 240 |

OSSAA 2022-2023
STATE GAME 5
EXTRA QUESTIONS

Extra:

- E1. This woman used the pen name Currer Bell for works published during her lifetime. Name this woman who authored the novel *Jane Eyre*.

Team One **Team Two**

Answer: Charlotte Bronte

- E2. In an experiment in 2005, this composite organism was found to be unaffected by 15 days in the vacuum of space. Which composite organism is found when algae or cyanobacteria grows amongst fungi in a mutualistic symbiosis.

Answer: Lichen

- E3. General Stonewall Jackson died as a result of a friendly fire incident during this Civil War battle. During which battle was Jackson shot by his own men while returning from a reconnaissance of the Union lines?

Answer: Battle of Chancellorsville

- E4. **Math Computation:** What is the length of the minor axis of an ellipse with the following equation: $(x + 15)^2 / 441 + (y - 12)^2 / 256 = 1$ [the quantity x plus 15 end quantity squared over 441 plus the quantity y minus 12 end quantity squared over 256 equals 1]?

Answer: 32

- E5. In this famous painting, five peasants gather around a table holding the food item mentioned in the painting's title. Name this painting by Vincent van Gogh.

Answer: The Potato Eaters

- E6. When tickets for this singer's upcoming concert tour went on sale, the Ticketmaster site crashed due to "historically unprecedented demand." Name this singer who released her tenth album, *Midnights* in 2022.

Answer: Taylor Swift

- E7. In 2004, this novel about a woman named Celie was adapted into a musical produced by Quincy Jones and Oprah Winfrey. Which book by Alice Walker was the basis of the musical which won 11 Tony Award nominations in 2006 and 2 Tony Awards in 2016?

Answer: The Color Purple

**OSSAA 2022-2023
STATE GAME 5
EXTRA QUESTIONS**

Team One Team Two

- E8. **Math Computation:** Find all roots of the quadratic: $x^2 = 35x - 300$
[x squared equals 35x minus 300].

Answer: (x=) 15, 20 [must have both]

_____ _____

- E9. A siege of this French city was broken in 1429 when Joan of Arc led a French army against English forces. The breaking of the siege of which city was a turning point in the Hundred Years' War?

Answer: Orleans

_____ _____

- E10. When separating blood in a centrifuge, these cells, along with platelets, comprise the thin, whitish buffy coat layer between the red erythrocyte [eh-rith'ro-sitz] layer and the yellowish plasma layer. What are these immune system cells that protect the body from foreign invaders?

Answer: White blood cells (or leukocytes [lu'ko-sitz])

_____ _____

OSSAA 2022-2023
STATE GAME 6
FIRST QUARTER
TOSS UP QUESTIONS

Team One Team Two

1. **Math Computation:** What is the surface area, in terms of square feet, of a solid hemisphere that has a radius of 8 feet? Put your answer in terms of pi.

Answer: **192 pi**

2. The death of John the Baptist is the subject of this opera by Richard Strauss. Which opera is named for the woman who convinced Herod to have John beheaded?

Answer: **Salome**

3. This educator is considered one of the founders of the idea of universal public education. Name this American educational reformer who created “normal schools” in Massachusetts to train future teachers for a free public education system for all children.

Answer: **Horace Mann**

4. The line "If music be the food of love, play on," is written in this poetic meter. Which meter is commonly used by Shakespeare in his plays?

Answer: **Iambic pentameter**

5. This Czech long-distance runner won three gold medals at the 1952 Summer Olympics held in Finland. Name this inventor of the interval training method who won the 5000-meter, 10000-meter, and marathon at the 1952 Games.

Answer: **Emil Zatopek**

6. This city is the world's southernmost world capital. What city, named after the victor at the Battle of Waterloo, is the capital of New Zealand?

Answer: **Wellington**

7. **Math Computation:** Find the limit as x approaches zero of the expression $(81x^4 - 6x - 48) / (63x^4 + 10x + 16)$ [the quantity 81 x to the fourth minus 6x minus 48 end quantity over the quantity 63 x to the fourth plus 10x plus 16 end quantity]

Answer: **-3**

**OSSAA 2022-2023
STATE GAME 6
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

8. The flamenco is a traditional dance of this country. In which country is the flamenco associated with the Andalusian Roma people known as Gitanos?

Answer: Spain

_____ _____

9. **Science Computation:** If the force due to kinetic friction between two objects is 18 Newtons and the normal force is 90 Newtons, what is the coefficient of kinetic friction between the two objects?

Answer: 0.20

_____ _____

10. The letters P.S., in place of these two words, usually appear before added information in a written letter. For what do the letters P.S. stand?

Answer: Post Script

_____ _____

11. In a closely watched senate race, this man defeated Mehmet Oz to become the next U.S. senator from his state. Name this man who had been serving as lieutenant governor of Pennsylvania since 2019.

Answer: John Fetterman

_____ _____

12. The Oklahoma City Thunder is the only remaining major league sports teams in Oklahoma. Give the name of the team, now known as the Dallas Wings, that relocated after the 2015 season.

Answer: Tulsa Shock

_____ _____

13. **Math Computation:** Find the value of c that makes the following quadratic into a perfect square: $x^2 + 15x + c$ [x squared plus 15x plus c].

Answer: (c=) 225/4 (or 56&1/4 or 56.25)

_____ _____

14. This fruit is the subject of a New Year's tradition in Spain. Which fruit do Spaniards eat 12 of at midnight to welcome the coming 12 months?

Answer: Grapes

_____ _____

**OSSAA 2022-2023
STATE GAME 6
FIRST QUARTER
TOSS UP QUESTIONS**

Team One Team Two

15. The symbol for this derived SI unit is sr. What unit is used for the solid angle that, when centered in a sphere, cuts off a cap whose surface equals that of a square having the radius as a side?

Answer: Steradian

_____ _____

16. This literary term refers to the ideas or feelings a word invokes rather than its literal dictionary definition. What is this term for associations of words such as red with anger or inquisitive with a negative image of being nosy?

Answer: Connotation

_____ _____

17. In September 2022, this man announced that he was leaving *The Daily Show*. Name this comedian from South Africa who also hosted the 2022 Grammy Awards.

Answer: Trevor Noah

_____ _____

18. This 1649 Act was proposed by Lord Baltimore to allow both Protestants and Catholics to reside in Maryland. What was the name of this Act that made blasphemy and disparaging another's religion a crime?

Answer: Act of Toleration

_____ _____

19. Microsoft bought this operating system from Tim Paterson in 1981 for use on the IBM personal computer. Name this system that was standard to all IBM PC compatible computers during the 1980s.

Answer: MS-DOS

_____ _____

20. This small hand-held tool is used by masons to apply mortar to bricks. What is the name for this tool, a form of which is also used by gardeners for planting?

Answer: Trowel

_____ _____

**OSSAA 2022-2023
STATE GAME 6
SECOND QUARTER
60 SECOND QUESTIONS**

WORLD HISTORY - HISTORIC AGREEMENTS

Directions: Given a year and a brief description, identify the following treaties, or other historic agreements.

- | | | |
|-----|-------------------------------------------------------------------|------------------------------------|
| 1. | 1882, Secret agreement between Germany, Austria-Hungary and Italy | <u>Triple Alliance</u> |
| 2. | 1905- Ended Russo-Japanese War | <u>Treaty of Portsmouth</u> |
| 3. | 1919- Primary treaty produced by the Paris Peace Conference | <u>Treaty of Versailles</u> |
| 4. | 1817- Agreement that limited naval forces on Great Lakes | <u>Rush-Bagot Agreement</u> |
| 5. | 1814- Ended War of 1812 | <u>Treaty of Ghent</u> |
| 6. | 1795- Fixed southern U.S. boundary at 31 degrees N. latitude | <u>Pinckney's Treaty</u> |
| 7. | 1848- Ended Mexican-American War | <u>Treaty of Guadalupe Hidalgo</u> |
| 8. | 1854- Japan's first treaty with a Western nation | <u>Treaty of Kanagawa</u> |
| 9. | 1901- Establish U.S. rights over proposed Central American canal | <u>Hay-Pauncefote Treaty</u> |
| 10. | 1494- Divided the New World between Portugal and Spain | <u>Treaty of Tordesillas</u> |

EXTRA:

- | | | |
|----|------------------------------------------------------|---------------------------------|
| 1. | 1648- Ended the Thirty Years' War | <u>Peace of Westphalia</u> |
| 2. | 1700- Peace treaty between Russia and Ottoman Empire | <u>Treaty of Constantinople</u> |

**OSSAA 2022-2023
STATE GAME 6
SECOND QUARTER
60 SECOND QUESTIONS**

LITERATURE - NON-FICTION BESTSELLERS OF DECEMBER 2022

Directions: Given the title of a non-fiction book on the New York Times bestseller list in December, name the author.

- | | | |
|-----|-------------------------------------------|-----------------------------|
| 1. | The Light We Carry | Michelle Obama |
| 2. | Friends, Lovers, and Big, Terrible Things | Matthew Perry |
| 3. | Surrender | Bono |
| 4. | So Help Me God | Mike Pence |
| 5. | The Song of the Cell | Siddhartha Mukherjee |
| 6. | The Philosophy of Modern Song | Bob Dylan |
| 7. | Comedians in Cars Getting Coffee Book | Jerry Seinfeld |
| 8. | Cinema Speculation | Quentin Tarantino |
| 9. | The Storyteller | Dave Grohl |
| 10. | I'm Glad My Mom Died | Jeanette McCurdy |

EXTRA:

- | | | |
|----|---------------------|-----------------------|
| 1. | And There Was Light | Joon Meacham |
| 2. | A Heart That Works | Robert Delaney |

**OSSAA 2022-2023
STATE GAME 6
SECOND QUARTER
60 SECOND QUESTIONS**

MUSIC - COMPOSERS OF OPERAS WITH ONE WORD TITLES

Directions: Given the one word title of an opera, name the composer

- | | | |
|-----|-----------|------------------------------------|
| 1. | Otello | Guiseppe <u>Verdi</u> |
| 2. | Carmen | Georges <u>Bizet</u> |
| 3. | Tosca | Giacomo <u>Puccini</u> |
| 4. | Faust | Charles <u>Gounod</u> |
| 5. | Fidelio | Ludwig van <u>Beethoven</u> |
| 6. | Salome | Richard <u>Strauss</u> |
| 7. | Lohengrin | Richard <u>Wagner</u> |
| 8. | Wozzeck | Alban <u>Berg</u> |
| 9. | Orfeo | Claudio <u>Monteverdi</u> |
| 10. | Rigoletto | Guiseppe <u>Verdi</u> |

EXTRA:

- | | | |
|----|----------|-------------------------------|
| 1. | Parsifal | Richard <u>Wagner</u> |
| 2. | Turandot | Giacomo <u>Puccini</u> |

**OSSAA 2022-2023
STATE GAME 6
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

21. **Chemistry calculation:** Knowing the charge on oxygen is negative 2, what is the oxidation number for nitrogen in the ion, NO_3^- [N O 3 negative]?

Answer: +5 [positive 5]

22. Madame DeFarge is one of the central characters in this novel published in 1849. Which Dickens novel features this woman who spends much of her time knitting an endless scarf?

Answer: A Tale of Two Cities

23. In November 2022, this woman won her 48th World Cup slalom title, the most by any skier in a single discipline. Name this American skier who has won 75 World Cup races, 6 world championships, and 2 Olympic gold medals.

Answer: Mikaela Shiffrin

24. In August 1934, this man, who had been found guilty of tax evasion and conspiracy to violate Prohibition laws, was transferred from the Atlanta penitentiary to Alcatraz. Which man dominated organized crime in Chicago from 1925 to 1931?

Answer: Al Capone

25. **Math Computation:** What is the exact value of the tangent of 7π over 6 radians?

Answer: $\sqrt{3}/3$ [radical (square root of) 3 over 3] (or 1/3 radical 3)

26. In a painting, this line is the actual height of the viewer's eyes when looking at a scene or the physical/visual boundary where land meets sky. What is this area to which the eye is drawn in a painting?

Answer: Horizon

27. This motion occurs when a steady wind blows parallel to the shore of a large body of water, pushing the surface water farther offshore and causing deeper colder water to replace it. What term do geologists use for this motion of colder nutrient-rich water to the surface?

Answer: Upwelling

**OSSAA 2022-2023
STATE GAME 6
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

28. In classic Greek plays, this group of characters is used to represent the general public. What is the collective name for this group which provides commentary on the action in the play?

Answer: Chorus

_____ _____

29. In October 2022, the Jhulta Pul suspension bridge collapsed in this country killing more than 130 people. In which country was the pedestrian bridge over the Machchhu River in the city of Morbi reopened only days earlier after being repaired by a clock-making company?

Answer: India

_____ _____

30. In 1588, this woman declared in a speech "I know I have the body of a weak and feeble woman, but I have the heart and stomach of a king." Which ruler gave this speech to her troops in anticipation of a possible Spanish invasion?

Answer: Elizabeth I

_____ _____

31. **Math Computation:** What is the product of the two binomials, x^2 minus 3 and x minus 8?

Answer: $x^3 - 8x^2 - 3x + 24$ [x cubed minus 8 x squared minus 3x plus 24]

_____ _____

32. In music notation, which minor key has 7 flats in its key signature?

Answer: D-flat minor

_____ _____

33. During replication of a eukaryotic cell, one of these structures is formed from copies of a single DNA molecule. What is this term for one half of a duplicated chromosome?

Answer: (sister) Chromatid

_____ _____

34. This Chilean poet won the 1971 Nobel Prize for Literature. Which poet's most popular collection was titled *Twenty Love Poems and a Song of Despair*?

Answer: Pablo Neruda

_____ _____

**OSSAA 2022-2023
STATE GAME 6
THIRD QUARTER
TOSS UP QUESTIONS**

Team One Team Two

35. This band was formed in 1984 by Kim Thayil, Hiro Yamamoto, and Chris Cornell. Name this band that had hits with "Spoonman" and "Black Hole Sun" from the 1994 album *Superunknown*.

Answer: Soundgarden

36. This southern tip of the Tierra del Fuego archipelago is the southernmost point in South America. What is this point in Chile which marks the northern boundary of the Drake Passage?

Answer: Cape Horn

37. **Math Computation:** What is the Z-score in a normally distributed data set, if the score is 130, with a mean of 100 and a standard deviation of 15? Remember the z-score equals the difference between x and mu divided by s.

Answer: 2

38. The ruins of the ancient temple known as Angkor Wat can be found in this country. Which country was known for its "killing fields" during the reign of Pol Pot?

Answer: Cambodia

39. This 8-letter term is used in anatomy to refer to the area of the back below the ribs but above the hips. Identify this term used in television ads when referring to support for the lower back included in a car's seats.

Answer: Lumbar

40. In writing, the mood of a verb expresses an action as a statement of fact. Which mood is present in the sentence, "She likes the gift?"

Answer: Indicative

**OSSAA 2022-2023
STATE GAME 6
FOURTH QUARTER
60 SECOND QUESTIONS**

MATH - ADDING RADICALS

Directions: Add the following radicals together, simplifying your answer. {Moderator – read $\sqrt{8}$ as radical 8.}

- | | | |
|-----|----------------------------------------------------|---------------------------------|
| 1. | $\sqrt{32} + \sqrt{8}$ [radical 32 plus radical 8] | $6\sqrt{2}$ |
| 2. | $\sqrt{12} + \sqrt{48}$ | $6\sqrt{3}$ |
| 3. | $\sqrt{24} + \sqrt{54}$ | $5\sqrt{6}$ |
| 4. | $\sqrt{45} + \sqrt{80}$ | $7\sqrt{5}$ |
| 5. | $\sqrt{28} + \sqrt{175}$ | $7\sqrt{7}$ |
| 6. | $\sqrt{75} + \sqrt{108}$ | $11\sqrt{3}$ |
| 7. | $\sqrt{40} + \sqrt{490}$ | $9\sqrt{10}$ |
| 8. | $\sqrt{96} + \sqrt{216}$ | $10\sqrt{6}$ |
| 9. | $\sqrt{99} + \sqrt{275}$ | $8\sqrt{11}$ |
| 10. | $\sqrt{60} + \sqrt{1500}$ | $12\sqrt{15}$ |

EXTRA:

- | | | |
|----|--------------------------|--------------------------------|
| 1. | $\sqrt{20} + \sqrt{180}$ | $8\sqrt{5}$ |
| 2. | $\sqrt{27} + \sqrt{147}$ | $10\sqrt{3}$ |

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60 SECOND QUESTIONS**

SOCIAL STUDIES - NOBEL PEACE PRIZE WINNERS

Directions: Given the year and a brief clue, identify the following winners of the Nobel Prize for Peace.

- | | |
|--------------------------------------------------------------------------|---------------------------------------------|
| 1. 1919- U.S. president | Woodrow <u>Wilson</u> |
| 2. 1931- Founder of Hull House | Jane <u>Addams</u> |
| 3. 1944- International Committee founded in 1863 | Red <u>Cross</u> |
| 4. 1945- US Secretary of State from Tennessee | Cordell <u>Hull</u> |
| 5. 1953- WWII General who proposed European Recovery Plan | George C. <u>Marshall</u> |
| 6. 1962- Physical theoretical chemist who advocated for Nuclear Test Ban | Linus <u>Pauling</u> |
| 7. 1964- Civil rights activist for nonviolent resistance | Martin Luther <u>King, Jr. (MLK)</u> |
| 8. 2007- US vice president- awareness of global warming | Al <u>Gore, Jr.</u> |
| 9. 2021- Russian journalist, advocate for an independent press | Dimitry <u>Muratov</u> |
| 10. 2015- Coalition of Tunisian civil society organizations | <u>National Dialogue Quartet</u> |

EXTRA:

- | | |
|--------------------------------------------------------------|----------------------------|
| 1. 2010- Chinese professor imprisoned after Tiananmen Square | <u>Liu Xiaobo</u> |
| 2. 2009- First African American to be US president | <u>Barack Obama</u> |

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60 SECOND QUESTIONS**

CHEMISTRY - IONIC FORMULAS

Directions: What is the molecular formula for each of the following ionic compounds? [Moderator: O is the letter not the number zero.]

- | | | |
|-----|--------------------|-------------------------------------------------------------------|
| 1. | Magnesium Sulfate | MgSO₄ [M G S O 4] |
| 2. | Calcium Hydroxide | Ca(OH)₂ [C A O H 2] |
| 3. | Aluminum Nitrite | AL(NO₂)₃ [A L N O 2 3] |
| 4. | Potassium Sulfite | K₂SO₃ [K 2 S O 3] |
| 5. | Lithium Carbonate | Li₂CO₃ [L I 2 C O 3] |
| 6. | Calcium Phosphate | Ca₃(PO₄)₂ [C A 3 P O 4 2] |
| 7. | Barium Cyanide | Ba(CN)₂ [B A C N 2] |
| 8. | Cupric Bromide | CuBr₃ [C U B R 3] |
| 9. | Hydronium Chloride | H₃OCL [H 3 O C L] |
| 10. | Strontium Silicate | SrSiO₃ [S R S I O 3] |

EXTRA:

- | | | |
|----|-----------------------|--------------------------------------------------------|
| 1. | Sodium Chlorite | NaClO₂ [N A C L O 2] |
| 2. | Magnesium Bicarbonate | Mg(HCO₃)₂ [M G H C O 3 2] |

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EXTRA QUESTIONS

Extra:

- E1. **Math Computation:** Angle theta is in quadrant two and the cosine of angle theta equals negative 7 over 25. What is the tangent of angle theta?

Answer: -24/7

- E2. There are four primary mountain ranges in Oklahoma. Name all four.

Answer: Arbuckle Mountains, Wichita Mountains, Ozark Mountains, and Ouachita [Wash-i-tah] Mountains

- E3. In November 2022, this singer announced she would have to postpone some of her upcoming scheduled concerts due to a vocal strain. Which Oklahoma singer, known as “the Queen of Country,” has had more than 100 singles reach the Billboard Hot Country Songs chart, including 25 number one hits?

Answer: Reba McEntire

- E4. This plant is often called Japanese horseradish. Which spicy plant is sometimes served as a green paste?

Answer: Wasabi

- E5. **Chemistry calculation:** What is the structural formula for carbon dioxide?

Answer: OCO

- E6. This term refers to a rhythmic sequence or flow of sounds in language. What is this 7-letter term beginning with C?

Answer: Cadence

- E7. This category 4 hurricane barreled into the west coast of Florida in September 2022, becoming the second-deadliest storm to strike the continental U.S. Name this storm that left more than 150 dead with its 150+ mph winds and 15-foot storm surge.

Answer: Hurricane Ian

Team One **Team Two**

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

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STATE GAME 6
EXTRA QUESTIONS**

Team One Team Two

- E8. In 2002, Congress passed this legislation to regulate campaign financing. Which Act targeted soft money and issue ads not financed by a specific candidate?

Answer: McCain-Feingold Act

_____ _____

- E9. During alcoholic fermentation, the three-carbon pyruvate is broken down into this two-carbon compound. What is this compound with chemical formula C₂H₅OH [C 2 H 5 O H]?

Answer: Ethanol (or ethyl alcohol)

_____ _____

- E10. According to the book of Romans in the Bible, sin results in this wage. What result is contrasted with the gift of God in Romans chapter 6, verse 23?

Answer: Death

_____ _____