

1999 Terrapin Invitational Tournament
Questions by Virginia C
TOSSUPS

T1. Technically speaking, it's a fractal with Hausdorff dimension $\log 2 / \log 3$. It consists of an uncountable number of points, yet it has total length 0. It and its associated function are popular with math students for the number of counterexamples they provide. FTP, name this subset of the interval $[0,1]$, formed by repeatedly removing the middle third of the remaining intervals.

Answer: CANTOR's middle thirds SET

T2. It begins with a menacing opening theme, soon soothed by a solo violin, undoubtedly representing the title character. This work, opus 35 of its composer, had 4 movements, sometimes called Prelude, Ballad, Adagio, and Finale, though more frequently the movements are given more descriptive names. For instance, the Ballad is also known as the "Tale of the Kalender Prince." FTP, name this work by Nikolai Rimsky-Korsakov, based on the Arabian Nights.

Answer: SCHEHEREZADE (or Symphonic Suite After A Thousand and One Nights)

T3. Born in Naishapur, he studied under the Imam Mowaffak and became known as a scholar and astronomer. One of the commission appointed to revise the calendar, he is also the author of a historically important book on Al-Jabir, later known as algebra. FTP, name this man, known as the son of a tentmaker, whose best-known work, a collection of poetry, was translated by Edward Fitzgerald.

Answer: Omar KHAYYAM

T4. Born in Rouen, he reached the throne after the Battle of Wakefield with the help of Richard Neville, the Earl of Warwick. Shedding his dependence on Warwick, he secretly married Elizabeth Woodville. In 1470, he was briefly forced into exile by Warwick, but he regained the crown 6 months later. He then killed Warwick at the Battle of Barnet, and was probably responsible for the murder of his predecessor. FTP, name this English successor to Henry VI.

Answer: EDWARD IV

T5. He now lives in Natick, Massachusetts as a rabbi ousted from his pulpit into an emeritus position because of his extreme views. He was the author of Who Needs God, which addresses many people's apathetic attitude towards organized religion. Perhaps his most famous book is Why Bad Things Happen to Good People, in which he surmises that God may bring misfortune upon people in order to "teach lessons" and "strengthen faith." FTP, name this American author.

Answer: Rabbi Harold KUSHNER

T6. One prediction for the rate of this event is given by $M^2 P$ to the fifth divided by $M^2 X$ to the fourth over $H^2 C^2$, or roughly 10 to the 31st years. The largest detector for this event is the IMB, located in a salt mine under Lake Erie. The evidence now suggests that the time between such events must be even longer, otherwise, it should have been confirmed by now. FTP, name this reaction which produces a pion and an antielectron from one of the basic baryons.

Answer: PROTON DECAY

T7. First published in the magazine Novy mir in 1962, its publication was personally authorized by Khrushchev, during an attempt to de-Stalinize the Soviet Union. Impassive in tone, it describes the terrible degradation and suffering of one prisoner at a Stalinist labor camp. FTP, name this short novel by Aleksandr Solzhenitsyn.

Answer: ONE DAY IN THE LIFE OF IVAN DENISOVICH

T8. In this year, Irish explorer Robert Burke was the first to cross Australia from south to north; Isaac Hayes searched for open seas above the Arctic Circle; and John Speke and James Grant proved Lake Victoria a source of the Nile. The same year saw the birth of Polish pianist and statesman Ignace Paderewski and composers Hugo Wolf and Gustav Mahler. FTP, name this year, the year in which Garibaldi declared Victor Emmanuel II King of Italy and Abraham Lincoln was first elected to the White House.

Answer: _1860_

T9. The count of Quaregna and Cerreto, this man expanded on Gay-Lussac's law and determined the formula for water. He also differentiated molecules from atoms, and was the first to use the term molecule. FTP, name this Italian chemist, best known for his constant, 6.02×10^{23} , and his law that states the number of molecules of a gas is constant at fixed temperature and pressure.

Answer: Lorenzo _AVOGADRO_

T10. His best-seller _What's Ahead for the Economy: The Challenge and the Chance_ was hailed by Milton Friedman as "exciting and important," and former Treasury Secretary William E. Simon said it "tells where the economy is really going, and what you can do about it." Credited with inventing the position of television's first national economic commentator, he has held the position with which he is most known since the inception of his popular PBS show in 1970. FTP, name this man, host of "Wall Street Week."

Answer: Louis _RUKSEYER_

T11. After spending two years in Europe perfecting his learning, he returned to England prior to the outbreak of the English Civil War, conducting a sort of private school while supporting the Puritan cause with various tracts and pamphlets. In 1649, his reputation as a learned controversialist won him the position of Latin secretary to Oliver Cromwell. His other writings include _Of Education_ and the sonnet "How My Light Is Spent." FTP, name this writer, better-known for the poems "L'allegro" and "Il Penseroso," the elegy "Lycidas," and the epic _Paradise Lost_.

Answer: John _MILTON_

T12. During its early history, this city contained a sanctuary to Kybele, an Anatolian mother goddess, later replaced by a sanctuary of Artemis. During the third century BC, Lysimachos moved it south of Artemision, to the valley between the mountains Panayirdag and Bulbuldag. The site of St. John's Church, erected by Justinian, it was this leading city of the Seven Cities of the Apocalypse. FTP, name this city, to whose residents Paul directed an epistle and which housed one of the Seven Wonders of the Ancient World.

Answer: _EPHESUS_

T13. The headwaters of this river are found in the Chester Gap of the Blue Ridge mountains, but it is really only a small stream until it is joined by the Jordan River, near the town of Flint Hill. Other rivers in the watershed include the Robinson, Thornton, Hughes and Hazel, though its biggest tributary is the Rapidan. FTP, name this river which flows through Fredericksburg, Virginia on its way to the Chesapeake Bay.

Answer: _RAPAHANNOCK_ River

T14. Because her husband failed to sacrifice a prized animal, as part of a curse from Poseidon she conceived an unnatural passion for the animal. Aided by the great inventor Daedalus, she satisfied her lust by entering the hollow body of a wooden cow, allowing her to mate with a bull. The result of this union was Asterius, better known as the Minotaur. FTP, name this woman, wife of King Minos of Crete.

Answer: _PASIPHAE_

T15. When in Paris, Lincoln Kirstein became impressed with this man's company, Les Ballets, and invited him to come to the United States to establish a ballet company equivalent to those in Europe. The first result of his collaboration with Kirstein was the School of American Ballet, which opened early in 1934. FTP, name this dancer and choreographer who also founded the Ballet Society, which later became the New York City Ballet.

Answer: George _BALANCHINE_ (or Georgi Balanchivadze)

T16. He is a huge man who is the last crew member to board ship before it departs from Bombay. He has a cough when he comes aboard, but his fellow shipmates doubt that he is really dying, imagining that James Wait is merely trying to avoid his duties. Eventually, his impending death becomes evident, and he eventually dies after the Flores Islands appear on the horizon. FTP, name this man, the titular character of an 1897 Joseph Conrad novel.

Answer: The _NIGGER OF THE NARCISSUS_ (accept James _Wait_ on an early buzz)

T17. This complex was surrounded by a moat 200 meters wide, and the outermost enclosure is entered via a causeway that leads to three towered gateways called gopura. The second gallery, containing scenes of Hindu epics, was the province of the priests and the king. FTP, name this temple pyramid built in the 12th century by Suryavarman II and dedicated to Vishnu, the best known remnant of the Khmer empire.

Answer: _ANGKOR WAT_

T18. Recurrent and persistent thoughts, impulses, or images are experienced, at some time during the disturbance, as intrusive and inappropriate, and they cause marked anxiety or distress. These thoughts, impulses, or images are not simply excessive worries about real-life problems, but instead are repetitive behaviors (e.g., hand washing, ordering, checking) or mental acts (e.g., praying, counting, repeating words silently) that the person feels driven to perform in response to an obsession, or according to rules that must be applied rigidly. FTP, what psychological disorder do these symptoms describe?

Answer: _OBSESSIVE COMPULSIVE DISORDER_ (or _OCD_)

T19. The Cretaceous-Tertiary boundary, known as the K-T boundary, is seen as a thin clay band in the strata. Within this clay is an unusual type of quartz, which some scientists have cited as evidence of a massive asteroid impact at the time. FTP, name this type of quartz typified by unusual morphological traits associated with intensive stress.

Answer: _SHOCKED_ Quartz

T20. He contends that man is thrown into existence, not apart from things, but standing out from them. Authentic existences are experienced by those who feel angst in the face of nothingness and nowhere. The author of _On the Way to Language_, this man's philosophy distinguishes between two types of being, human existence and nonhuman presence. FTP, name this philosopher who expounds these beliefs in _Being and Time_.

Answer: Martin _HEIDEGGER_

T21. For many years, Tyrannosaurus Rex was assumed to have been the largest predatory dinosaur. That record has since been challenged, however, with the discovery of two specimens, one from South America, and the other from Africa. FTP, name either of these two huge predatory dinosaurs. Genus names alone are sufficient.

Answer: _GIGANTOSAURUS_ or _CHARCARODONTOSAURUS_

T22. The First Sally includes the creation of a robot which can create the perfect poetry, including a love poem expressed in the language of tensor algebra. In the seventh, Trurl creates a civilization, in a 15 cubic foot box. In the chapter "How the World was Saved," Trurl's friend Klapaucius almost ended the world by asking a machine to make Nothing. FTP, name this book about constructor robots trying to out-invent each other, written by Stanislaw Lem.

Answer: The _CYBERIAD_

T23. Aggressive, cavalier, and popular among the men under his command, he was one of the architects of carrier airpower. During World War II, he led the air wing of the US Pacific fleet to victory in such great aerial engagements as the Battle of the Philippine Sea. He was perhaps best known for his courageous decision to "turn on the lights" on the carrier decks the night after he dispatched a raid against the Japanese carriers during that battle. FTP, name this vice-admiral in the Pacific Theater.

Answer: Marc _MITSCHER_

T24. Born in Cheshire, CT, he started his career as an engraver, printing maps and banknotes in New York City. In 1840, he left for Europe, studying painting for 7 years before his return. Known for his luminous sunsets and detailed brushwork, he became one of the leaders of the Hudson River School. FTP, name this 19th century artist, known for his painting _Lake George_.

Answer: John _KENSETT_

T25. For most of its history, Israel's military doctrine has focused on the concept of a lightning war, of winning a quick victory through mobility and encirclement. However, after the Six-Day-War, this man became the leading proponent of the idea that Israel depart from this doctrine, and built an elaborate system of fortresses along the Suez Canal. When the Egyptians launched their attack across the Canal in 1973, the line, named for him, became a costly failure. FTP, name this Israeli General, Chief of Staff of the Israeli Army during the Yom Kippur War.

Answer: Chaim _BAR-LEV_

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BONUSES (All worth 30 points)

B1. Given the description of the 20th Century military warship, name it FTP each.

1. This heavy cruiser accompanied the Bismarck during its only sortie in May 1941. She was to survive the war, rarely leaving French ports.

Answer: _PRINZ EUGEN_

2. One of America's first large aircraft carriers, she survived World War II only to be sunk by the US Navy during nuclear tests in 1946 at Bikini Atoll. Her sister ship, the Lexington, was sunk during the Battle of the Coral Sea.

Answer: _SARATOGA_

3. America's first nuclear powered submarine and the first American ship to sail to the North Pole, she is now part of a museum in Groton, Conn.

Answer: _NAUTILUS_

B2. In the ongoing search for new propulsion technologies for spacecraft, designs were created for spacecraft that would use gigantic sails. FTP each, answer the following questions regarding these unusual spacecraft.

1. What type of particles would solar-sail craft use for propulsion?

Answer: _PHOTON_(s) (do NOT accept solar wind)

2. There is another type of sail design that would use solar wind to propel itself. FTP, name it.

Answer: _MAG-SAIL_1 (or _Magnetic Sail_)

3. Robert Forward has developed an ultra-light (20 gram) wire mesh sail that would make use of a proposed solar power satellite for its launch. The satellite would beam microwaves towards the sail to propel it. What is the name of this proposed spacecraft?

Answer: _STARWARP_

B3. Answer the following about _A Midsummer Night's Dream_ for the stated number of points.

1. For 5 points each, name Hermia's true love and her betrothed. Note: The must be in the right order to get points.

Answer: _LYSANDER_ (true love) and _DEMETRIUS_ (betrothed)

2. A group of tradesmen produce a very bad play for the Duke. FTP, what was its title?

Answer: _PYRAMUS AND THISBE_

3. For a final 10 points, who plays Pyramus in that play?

Answer: _BOTTOM_

B4. Answer the following questions about Benjamin Britten for the stated number of points.

1. For 5 points, this series of orchestral variations on a Purcell piece has been nearly as popular as _Peter and the Wolf_ in introducing children to orchestral instruments.

Answer: The _YOUNG PERSON'S GUIDE TO THE ORCHESTRA_

2. Much of his music for tenor, including the title role in _Peter Grimes_, was written for the unique clarion voice of this man, his life companion, lover and long-time collaborator. Name him FTP.

Answer: Peter _PEARS_

3. After fleeing to America in 1939, he returned to England after an attack of homesickness in 1942. On the return voyage, he composed this choral work, which has since become a Christmas favorite. Name it for 15 points.

Answer: A _CEREMONY OF CAROLS_

B5. 30-20-10 Name the year from clues.

- 30) Edward Jenner discovers the Small Pox vaccine
- 20) Catherine the Great dies of a stroke at the age of 67
- 10) John Adams is elected as the second president of the US.

Answer: _1796_

B6. Evaluate the following mathematical expressions FTPE

1. $\int_{-1}^1 \frac{x}{x^2 + 1} dx$ [The integral from -1 to 1 of x over x squared plus 1 dx]

Answer: _0_

2. $\sum_{n=1}^{100} n$ [The sum for n=1 to 100 of n]

Answer: _5050_

3. $\lim_{x \rightarrow \infty} \frac{3x - 7}{2x + 5}$ [The limit as x goes to infinity of 3X minus 7 over 2X plus 5]

Answer: _3/2_ or _1.5_

B7. Answer the following about Thomas Mann FTPE.

1. First, name Mann's first novel, dealing with the idea that ordinary life is not sufficient for an artist's inner needs.

Answer: _BUDDENBROOKS_

2. Next, name his last novel, the unfinished story of a charming but amoral young man.

Answer: The _CONFESSIONS OF FELIX KRULL: CONFIDENCE MAN_

3. Finally, name the bildungsroman about Hans Castorp and his time in a Swiss tuberculosis sanatorium.

Answer: The _MAGIC MOUNTAIN_

B8. There's just not enough jazz in quiz bowl. Name these Jazz pioneers FTP each.

1. Known for her pure tone and voice control, her first hit was "A Tisket, A Tasket" in 1938.

Answer: Ella _FITZGERALD_

2. A sometime duet partner with Fitzgerald, this deep voiced singer and noted trumpeter helped bring the music of New Orleans to the world stage.

Answer: Louis _ARMSTRONG_

3. This singer is known for her melancholy improvisations. Some of her biggest hits were "Strange Fruit" and "Lover Man."

Answer: Billie _HOLIDAY_

B9. Answer the following about the Tiahuanaco Empire, FTP each.

1. The capital of this empire sat on the southern shore of what mountain lake?

Answer: Lake _TITICACA_

2. The descendants of the Tiwanaku belong to this group of Indians, also the name of the language spoken in the empire.

Answer: _AYMARA_ Indians

3. One of the earliest large civilizations in the Andes, it rose to prominence in what century?

Answer: _FOURTH_ century _AD_ (or CE)

B10. Identify the compound from its chemical formula FTP each.

- | | |
|---------------------------|---|
| 1. C_2H_5OH | Answer: <u>ETHYL ALCOHOL</u> (or <u>Grain Alcohol</u>) |
| 2. $C_{10}H_8$ | Answer: <u>NAPHTHALENE</u> |
| 3. $C_6H_2(CH_3)(NO_2)_3$ | Answer: <u>TRINITROTOLUENE</u> (or <u>TNT</u>) |

B11. Answer the following about Wuthering Heights for the stated number of points.

1. First, FTP, under what pseudonym was it published?
Answer: ELLIS BELL
2. For 5 points, name the character who says that marrying Heathcliff would degrade her.
Answer: CATHERINE Earnshaw
3. For 15 points, name Heathcliff's son, who is forced to marry Catherine's daughter.
Answer: LINTON

B12. Answer the following about Frederick the Great FTP each.

1. In 1740, Frederick succeeded this man, his father, to the throne.
Answer: FREDERICK WILLIAM I (or Friedrich Wilhelm I)
2. Now, name the large region he occupied in the opening days of the War of the Austrian Succession.
Answer: SILESIA
3. As a result of this 1748 treaty, Prussia's claim over Silesia was guaranteed.
Answer: Treaty of AIX-LA-CHAPELLE

B13. Name the artists from descriptions, FTP each.

1. This Frenchman spent most of his life in Italy, where he painted The Rape of the Sabine Women and The Holy Family on the Steps.
Answer: Nicolas POUSSIN
2. This religious painter did the frescoes for San Marco in Florence, including The Annunciation.
Answer: Fra ANGELICO (or Guidolini DI PIETRO or Giovanni DA FIESOLE)
3. This late Renaissance Italian painted The Calling of St. Matthew and The Conversion of St. Paul.
Answer: Michelangelo Merisi da CARAVAGGIO

B14. Answer the following questions about one story about Thor for the stated number of points.

1. First, for 5 points, name his hammer.
Answer: MJOLLNIR
2. Now, FTP, name the king of the Frost Giants who stole Mjollnir.
Answer: THRYM
3. For 5 points, this god persuades Thrym to trade Mjollnir for a bride.
Answer: LOKI
4. For a final ten points, this goddess is the bait Loki uses to persuade Thrym to give up Mjollnir. Thor cross-dresses, seizes Mjollnir, and slays Thrym.
Answer: FREYA

B15. Given some residents, name the circle of Dante's Hell FTP each.

- | | |
|---|-------------------------------|
| 1. The carnal sinners Paolo and Francesca | Answer: <u>SECOND</u> Circle |
| 2. The blasphemers and murderers | Answer: <u>SEVENTH</u> Circle |
| 3. Ugolino, the 13th century betrayer of Pisa | Answer: <u>NINTH</u> Circle |

B16. Identify the Supreme Court case from description FTP each.

1. In this case, the Supreme Court overturned an act of Congress for the first time.

Answer: MARBURY V. MADISON

2. In this 1895 case, the Court ruled that the Sherman Anti-Trust Act could not be applied to manufacturers.

Answer: UNITED STATES V. E. C. KNIGHT CO.

3. In this 1957 content, the Court defined obscene materials as that which lacks and redeeming social importance.

Answer: ROTH V. UNITED STATES

B17. Name the religion from description, FTP each.

1. The second largest Christian church, it includes the Church of Cyprus.

Answer: EASTERN ORTHODOX Church

2. Founded by Felix Adler in 1876, it stresses the importance of morality and ethics in human interaction.

Answer: Society for ETHICAL CULTURE

3. This religion grew out of Babism and is centered around the common foundation of all religion.

Answer: BAHA'I

B18. Given a brief description, name these items of southeastern U.S. geography for the stated number of points.

1. This city, situated on a bend of the Tennessee River, is the home of the headquarters of the Tennessee Valley Authority, and according to some the "Center of the Known Universe." Name it for 5 points.

Answer: CHATTANOOGA

2. This river rises in the Blue Ridge Mountains in northeastern Georgia, and flows 436 miles, marking part of the Georgia-Alabama and Georgia-Florida border before joining the Flint River at an eponymous Florida city. FTP, name this river, the inspiration for a Sidney Lanier poem.

Answer: CHATTAHOOCHEE River

3. For 15 points, this river forms the northern piece of the Georgia-South Carolina border. It was the river at which the movie "Deliverance" was filmed.

Answer: CHATOOGA River

B19. FTP each, answer these questions about a recent opera staging FTP each.

1. One of the so-called "Three Tenors," he is the artistic director of the Washington Opera.

Answer: Placido DOMINGO

2. Beginning on October 30, 1999 and running through November, with Placido Domingo in the title role the Washington Opera is putting on this opera, which hasn't been staged in the United States since 1902.

Answer: LE CID

3. Finally, name the French composer of Le Cid.

Answer: Jules MASSENET

B20. Many medicines are now being derived from animal venom. Some of these are unique within species. FTP each, name the venomous snake that produces each of the following presynaptic neurotoxins.

1. Notexin

Answer: Common TIGER SNAKE

2. Textilotoxin

Answer: Common BROWN SNAKE

3. Paratoxin

Answer: FIERCE SNAKE (or Inland Taipan)

B21. Name the 20th century artist from description FTP each.

1. Born in Philadelphia in 1898, this man built mobiles before the word mobile existed.

Answer: Alexander _CALDER_

2. Russian born, this sculptor is known for her large works of painted wood, metal and found objects such as her 1958 work "Sky Cathedral"

Answer: Louise _NEVELSON_

3. This abstract expressionist painted a series of murals at an ecumenical chapel in Houston in the late 1960's.

Answer: Mark _ROTHKO_

B22. 30-20-10 Name this man.

30) An apprentice grocer in Germany, he set sail for Colombia in 1841, only to be shipwrecked off the Dutch coast.

20) At Tiryns, he found a Mycenaean palace, with largely intact frescoes.

10) He found Priam's Treasure in 1873 in the ruins of Troy.

Answer: Heinrich _SCHLIEMANN_

B23. Name the Nobel Prize winning physicist given the prize-winning discovery FTP each.

1. Discovery of the neutron

Answer: Sir James _CHADWICK_

2. Invention of the Bubble Chamber

Answer: Donald A. _GLASER_

3. Invention of the holographic method

Answer: Dennis _GABOR_

B24. 30-20-10 Name this psychologist.

30) He majored in literature at Hamilton College in New York. He went to New York City in the late 1920s to become a writer, but he wasn't very successful. He decided to go back to school, and went to Harvard to study psychology.

20) He received his Ph.D. in 1931. In 1936 he took an academic position at the University of Minnesota where he wrote _The Behavior of Organisms_.

10) He wrote Walden II and developed the ideas of "operant conditioning" and "shaping behavior."

Answer: B.F. _SKINNER_

B25. Given the stock exchange, name the leading stock index. For instance, if I were to say "New York," you would answer "Dow Jones Industrial Average."

1. Hong Kong

Answer: _HANG SENG_

2. Paris

Answer: _CAC-40_

3. Frankfurt

Answer: _DAX_