

NEW TRIER VARSITY 2008

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Round 3: Hockey Moms Without the Lipstick Tossups

1. (MS) The second movement of this work abrogates the main key for B flat major and is an Andante molto moto in twelve-eight. The ABCABCA tempo d'Allegro section that ends the third movement of this work is interrupted by the fourth movement, an allegro in the minor that depicts a tempest. A knock on amateurs can be found in the sonata-rondo "Shepherd's song" that concludes this F major symphony. This work's composer noted that its setting of Heiligenstadt was reflected more by this work, with its "Cheerful impressions wakened by arrival in the country", than by a companion piece. Identify this symphony that premiered with the "Fate" Symphony that depicts rustic scenes, a work by Ludwig van Beethoven.

ANSWER: Beethoven's *Symphony No. 6 in F major ("Pastoral")*, ***Op. 68*** (accept any underlined part)

2. (RS) This team's first coach was Ted Marchibroda, and their current coach is the brother of Stanford's head football coach. Their current quarterback is in his rookie season out of the University of Delaware, and their current owner bought the team from Art Modell a few years after the franchise was relocated and renamed. They won their only Super Bowl, defeating the New York Giants thirty-four to seven. Name this AFC North team scheduled to play Dallas tonight whose nickname was inspired by Edgar Allan Poe.

ANSWER: **Baltimore Ravens** (accept partial answers)

3. (HT) Some of its less common definitions include the burrow of a badger, a place where fishing nets are secured, and a train of coal-trucks; these are among the over 200 definitions listed in the Oxford English Dictionary. For the most part, these definitions fall under one of the four following categories: the state of being fixed, actions involving the relocation of an object, the noun form of the preceding two categories, and a grouping of some sort. More common definitions include a sequence of jazz numbers, a grouping of tennis games, the act of becoming seated, and the action of putting something in its proper place or manner. Provide this three letter word that, when applied to the actions of the sun, signifies the end of day.

ANSWER: **set**

4. (DR) Computational — pencil and paper ready. In radians, find the x - and y -coordinates of the maximum point on the graph between x equals zero and x equals two pi of y equals the sum of sine of x plus cosine of x . Thirty seconds.

ANSWER: (x, y) equals (**pi over 4**, the square **root** of **2**) or (x, y) equals (**one-fourth** times **pi**, the square **root** of **2**) or equivalent

5. (DR) Computational — pencil and paper ready. Find the value of the derivative of y with respect to x at the point three comma two for the relation four x squared plus y squared equals forty. You have thirty seconds.

ANSWER: **-6**

6. (JG) The single lit candle among the brass chandelier's several has resulted in widely-varying interpretations, but the most common is that it represents the titular event. Indeed, it is often argued that the painting was created as a legal document to validate that. However, this is called into question by the left figure's use of his left hand instead of his right. The woman looks pregnant, but this was probably simply due to the predominant style of 1434, when it was made. A dog sits at her feet, and an observer of the ceremony can be seen in the mirror. The painting is now in London's National Gallery. Name this oil painting that depicts the marriage of a Lucca merchant, a work by Jan van Eyck.

ANSWER: The Arnolfini Portrait (accept "Marriage", "Wedding", or "Double Portrait" for "Portrait") or *Portrait of Giovanni Arnolfini and his Wife* (accept clear knowledge equivalent)

7. (JG) Millman's Theorem can be applied to these, as can the delta-wye transform or the program SPICE. Hans Mayer and Edwin Norton independently arrived at a theorem that can also simplify their analysis, now known as Norton's Theorem. That theorem is a companion to Thévenin's [THEV ninz] Theorem, which simplifies linear ones into just two components and was discovered by Hermann von Helmholtz. Another law applied to these can be stated as the divergence of the J-field equals negative the divergence of the partial derivative of the displacement field with respect to time, but is more often written in relation to sums at a node. That is, along with the loop rule, one of Kirchhoff's [KERK awvs] laws for these. Identify these connections of components such as inductors, capacitors, and resistors that can also sometimes be analyzed with Ohm's Law.

ANSWER: electrical circuits or electrical networks

8. (TB/JG) The Glass-Steagall Act resulted in the breakup of this man's major achievement. One of the first deals he brokered merged the Thomson-Houston company with Edison's company to form General Electric. His later deals included creating the International Harvester Company and a grouping of transatlantic shipping lines, as well as one that created U.S. Steel from Carnegie's company. He became the head of the first billion-dollar company at the turn of the 20th century when he purchased the steel businesses of Andrew Carnegie, and he would also later encourage many bankers to pledge large sums of their own money to shore up the economy during the Panic of 1907. Name this American financier who ran U.S. Steel and whose namesake bank still operates in New York.

ANSWER: John Pierpont Morgan

9. (DR) One of this poet's longer works begins by claiming that when he was a child objects appeared in a celestial light. He also wrote a sonnet claiming that we are out of tune, wishing that we could look at nature and see Proteus and Triton. Another work describes the joy he received from seeing a large group of golden flowers fluttering in the breeze. That work begins, "I wandered lonely as a cloud." He often got advice from his sister Dorothy with his writing, and he sometimes collaborated with Samuel Coleridge. His works include "Ode: Intimations of Immortality", "The World Is Too Much With Us", and "Daffodils". Name this poet who wrote "Lines Composed a Few Miles Above Tintern Abbey".

ANSWER: William Wordsworth

10. (SS) This man created the Kirtland Safety Society to raise money for his organization's operations, and was arrested for bank fraud after assaulting David Patten for challenging him. His organization moved around often, at one point getting expelled from Missouri into Illinois, where he was eventually shot and killed by an angry mob. There was some confusion over who would succeed him; candidates included his son by the same name and another son, Samuel. His organization believes in the story of the golden plates, which he discovered. They speak of Jesus walking among indigenous people, the descendants of Jews who had migrated to the New World several hundred years before his birth. Name this man who was followed by Brigham Young as the leader of the Church of Jesus Christ of Latter Day Saints.

ANSWER: Joseph Smith, Jr.

11. (JP) Computational — pencil and paper ready. This is the value of Euler's [OY lurz] totient [TOH shent] function for 427. It's also the smallest number divisible by every number except seven from 1 through 10, and it's the positive geometric mean between 90 and 1,440. This number is the area of an isosceles right triangle inscribed in a circle of radius $6\sqrt{10}$, and it's also the sum, in degrees, of the exterior angles of a decagon, an octagon, a heptagon, a hexagon, a pentagon, a quadrilateral or a triangle. Thirty seconds.

ANSWER: **360**

12. (JP) As a result of the American Civil War, this city at the mouth of the Ulhas River became the world's chief cotton trading market. When the Suez Canal opened in 1869, it became an even more important seaport, growing into a major urban center of over a million people by 1906. In 1996, it became officially known by its Gujarati name. (*) This city contains the Oberoi Trident, Leopold Cafe, and a luxury hotel named the Taj Mahal Palace & Tower. Name this Indian city, recently wracked by a violent terrorist attack against Westerners which killed nearly 200 people.

ANSWER: **Mumbai** (accept **Bombay** before * and prompt on it thereafter)

13. (JG) This usually develops embryologically from the mesenchymal [mehz ehn KI mul] blastema [blast EE mah]. Some animals, like jellyfish and annelids [ANN uh lidz], have a hydrostatic type of this, which uses pressure to produce motion. Spicules and cuttlebones fulfill a similar purpose to this, though they aren't really one, and this structure comes in exo- and endo- varieties, the latter being the one found in humans. Its constituent parts are formed by ossification and can be affected by osteoporosis. Name this support structure that in humans usually consists of two hundred six bones.

ANSWER: **skeleton** (accept **skeletal** system or clear knowledge equivalents)

14. (JG) Among his foreign contacts were the receipt of a blessing from Pope Gregory the Tenth, which fits in with his general acceptance of other religions. This man tried to conquer parts of Malay and Java, but these expeditions were unsuccessful. He did, however, manage to establish a new capital at Peking. He also opened many trade routes to the west, employed Marco Polo, and was responsible for the implementation of paper money and the creation of a script for the Mongol alphabet. Name this Mongolian general who Samuel Taylor Coleridge wrote about in a rather unusual poem.

ANSWER: **Kublai Khan** or **Khubilai Khan** (accept **Kubla Khan**; prompt on **Khan**)

15. (JP) In 2014, the European *Rosetta* probe will orbit one such object and place a lander on it. The theoretical Oort Cloud is thought to be composed of these objects, and Aristotle referred to them as "stars with hair". Though they are actually very dark bodies, they give off a great deal of light at and near perihelion as a result of the ejection of dust and gas due to heating from the sun. Name these bodies in space, often seen as bad omens by early people, whose tails point away from the sun.

ANSWER: **comets**

16. (JG) This constant gives the proportionality between the fundamental charge and the Faraday constant, and a predecessor of it was Loschmidt's constant. It is usually determined from metals' lattice distances. Jean Perrin proposed its name and was instrumental in finding its value, which is now usually found by X-ray diffraction and is defined in terms of atoms in carbon-twelve. Give this number that represents the number of particles in a mole of something, equal to about 6.02 times ten to the twenty-third.

ANSWER: **Avogadro**'s number (accept "constant", etc., for "number")

17. (DR) The main female character in this play grew up wanting to become a nun or a pianist. She is the mother of two grown men and has trouble accepting the fact that her younger son has tuberculosis. While the men in her family struggle with alcoholism, she is addicted to morphine. The family consists of James, Jamie, Edmund, and Mary Tyrone. It was not published until the playwright died because it contained a lot of uncomfortable truths about his family. Name this work by Eugene O'Neill.

ANSWER: **Long Day's Journey Into Night**

18. (DR) Computational — pencil and paper ready. Find the arc length from x equals zero to x equals one of the graph of y equals the square root of the quantity one minus x squared. Thirty seconds.

ANSWER: pi over two or one-half times pi

19. (JG) This device was invented by Douglas Engelbart in 1963 at the Stanford Research Institute, and originally its operation was conceived to involve constant manipulation with the dominant hand. Bill English refined the design in 1972, adding the ball that was for a long time the most important mechanism in it. Distributed first with the Xerox Alto computer and popularized with the first Macintosh, on PCs it used to use the green PS/2 connector that has now been phased out. Name this computer input device whose cord resembles the tail of its namesake animal.

ANSWER: computer mouse or computer mice

20. (JP) The Adamantine gates are found near it, and the goddess that represented it was the mother of the Hydra and the first to take the side of Zeus in his fight against the Titans. Its name is synonymous with "hate", and it could dissolve any vessel except for that made of a horse's hoof. Those without an obol will not be ferried across it by Charon. Identify this river of the underworld in which Achilles was dipped and on which all gods swore their oaths.

ANSWER: the river Styx