

**Round 5**  
**WinterBowl 2009**

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Revised for pyramidality by Stephen Barbarossa and Matthew Dirks

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**Warm-Ups**

**Warm-Up 1.** Joseph of Arimathea donated his to Jesus of Nazareth. Howard Carter discovered one of these in the 1920s. What are these resting places, words ending in a silent “b,” where dead bodies reside? **tomb(s)**

**Warm-Up 2.** Famous players of this instrument include J.J. Johnson, Tommy Dorsey, and Al Grey, who was famous for using a plunger mute with this instrument. What is this brass instrument with seven positions and a prominent slide? **trombone**

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**Round 5**

1. Mammals who can produce this include the solenodon and the platypus. Contrasted with poisons, which make bad things happen when they are eaten or absorbed through the skin, this is usually transmitted by a bite or a sting. What is this toxin, present in mambas and cobras?

**venom**

2. Math. Waldo earned seventy-five dollars one week and spent sixty dollars. The ratio of the amount saved to the amount earned is one to . . .

**five**

- 3 Math. How many different combinations of shirts and shorts are possible with three tank tops and four pairs of shorts?

**twelve**

- 4 This is an element which refracts electromagnetic radiation outside of the visual spectrum. Using this item, W. Snell developed a formula used to describe the relationship between the angles of incidence and refraction. Name this transparent, shaped optical device with axial symmetry that transmits and refracts light.

**lens**

- 5 A Spanish-born descendent of nobility, this man was ultimately beheaded because of a rivalry with Pedrarias. This famous explorer discovered the South Sea and established the first permanent European settlement on the mainland of the Americas, Santa María la Antigua del Darién. Name this conquistador who embarked on an expedition to Central America, led a march across the Isthmus of Panama, and discovered the Pacific Ocean.  
**(Vasco Núñez de) Balboa**

- 6 Math. The volume of a cube twelve centimeters on an edge is how many cubic centimeters?

**1728**

- 7 This line is from what book by the author of *Moll Flanders*?

“I, poor miserable [man], being shipwreck'd, during a dreadful storm, in the offing, came on shore on this dismal unfortunate island, which I call'd the Island of Despair, all the rest of the ship's company being drown'd, and my self almost dead.”

**Robinson Crusoe**

8. Some of his famous statues include the earliest “Pietà” and a statue of David. He also designed the dome of St. Peter's Basilica. Who is this Renaissance artist who painted frescoes in the Sistine Chapel?

**Michaelangelo (di Lodovico Buonarroti Simoni)**

9. Luke Howard first proposed the system for classifying these in 1802. Certain bacteria reside in these, and they have evolved the ability to promote rainstorms as a way to disperse themselves. Moreover, solar energy is reflected back into space from Earth by these. What are these objects, examples of which are nimbus, cirrus, and cumulus?

**clouds**

- 10 Lamarck came up with an early version of this theory, which stated that traits acquired in life can be passed on to successive generations. Though this theory requires random mutations, it also relies on the nonrandom process of natural selection. What is this theory positing that small mutations lead to complex and diverse life forms, presented by Charles Darwin in *The Origin of Species*?

**evolution**

**11.** The largest non-clonal tree by volume grows in Sequoia National Park, and is named after this Civil War general. This general shares a middle name with the Indian leader of the Shawnee tribe who opposed the United States during the War of 1812, Tecumseh. What is the name of this Civil War general, who famously burned Atlanta at the conclusion of the war?

**(William Tecumseh) Sherman**

**12** Another word for this type of fracture is “open”, because the bone is exposed to contamination. What is this type of fracture in which bone protrudes from the skin? They're very nasty.

**compound**

**13** The highest point in this state is Black Mountain, at 4,145 feet. The Cumberland Gap is a pass through the Cumberland Mountains near the point where Virginia, Tennessee, and this state meet. What is this state, whose capitol is Frankfort?

**Kentucky**

**14** This party came to power soon after the Great Depression peaked in Germany. Members of this party included Goebbels and Goering. What is this party, whose most infamous leader was appointed chancellor of Germany?

**Nazi (National Socialist German Workers' Party)**

**15** Economist Rick Nevin published a study linking exposure to this substance with violence. Found in some paints and batteries, this can cause abdominal pain, anemia, and irritability. Name the dangerous substance that sparked the swift recall of playground sets, solar system kits, and other children's toys, and which in 2004 was found in severely high levels in Seattle Public Schools drinking fountain water.

**lead**

**Half Time! Ask for substitutions.**

**16** Hero of Alexandria invented the earliest known models in the 1<sup>st</sup> century AD, including the aeolipile which used a certain mechanism to rotate a ball. However, these could not be used practically for the purpose of turning one type of energy into another. The first practical model was invented in 1802 by William Symington, and Robert Fulton used it on a passenger boat. What is this invention which uses water vapor to perform mechanical work?

**steam engine**

**17** This country is the world's largest producer of olive oil. Perched on a sea bordered by three continents, this is the closest European nation to Africa. Name this country, found on the Iberian Peninsula, whose capital is Madrid.

**Spain**

**18.** Mercury is one of the few elements that is in this phase at room temperature and standard pressure. Glass is sometimes considered to be in this phase, though that classification is debatable. What is this phase, which takes the shape of its container, an example of which is water?

**liquid**

**19** These birds are the only known parrots to display lekking behavior, and only one of two nocturnal parrots. The males have a booming mating call, but females respond only when there is abundant fruit. What are these nearly-extinct birds native to New Zealand, whose name is Māori for “night parrot”?

**kakapo(s)**

**20** In this biome, low temperatures lead to stunted vegetation. There also tend to be long periods of daylight or darkness, sometimes up to four months at a time. Name the biome where there a layer of permanently frozen subsoil called permafrost exists.

**tundra**

**21** Math. On a wintry day in Chicago, the minimum predicted temperature is two degrees and the mean predicted temperature is eight point five degrees. What is the maximum predicted temperature?

**fifteen degrees**

**22** Your body needs this vitamin to help it produce collagen. Jacques Cartier discovered that a tea made from leaves containing this vitamin cured his men of scurvy. What is the common name for this vitamin, which humans ingest when consuming citrus foods?

**vitamin C**

**23** This structure, although not intended for this purpose, was used as a type of canvass for numerous European citizens to express their disapproval of one country's government. Ronald Reagan delivered a speech at Brandenburg Gate, demanding that Gorbachev tear down what structure, built in 1961 to curb the flow of refugees from East Germany to West Germany?

**Berlin Wall**

**24** The Suez Canal links this sea to the Red Sea, and the Dardanelles link it to the Black Sea. Islands in this sea include Ibiza and Sicily. What is this body of water, the world's largest inland sea?

**Mediterranean Sea**

**25** The pulmonary one carries deoxygenated blood to the lungs. The others carry oxygenated blood away from the heart. What are these large blood-transporting vessels?

**arteries**

**26** In 1872, this was established as the world's first national park. Passing through it are the Snake River, the Lewis River, and a river sharing its name. What is this park in Idaho, Montana, and Wyoming, home of the geyser Old Faithful?

**Yellowstone (National Park)**

**27** Math. A triangle has sides 8 miles and 11 miles. What is the longest possible integer length of the third side?

**17 miles**

**28** American composer Charles Ives used the melody from this patriotic song in his *Symphony #2*. Containing the line "the home of the brave and the free," this patriotic song is an extended metaphor, comparing the subject to a ship. What is this song, which uses a poetic nickname for the United States?

**"Columbia, (the) Gem of the Ocean"**

**29** The fifteenth amendment granted this right to Americans regardless of race, but it wasn't until 1920 that women had this right. What is this right which Americans are not guaranteed until eighteen years of age?

**suffrage (right to vote, etc.)**

**30** This component of the eukaryotic cell stores useful material and digests waste proteins and organelles. Found only in plants, what is this cytoplasm-less space, a fluid-filled structure enclosed by a membrane.

**vacuole**

### **Alternates**

**Alt 1.** In an interview with this guy's mother, she stated "I hope to hell he stole those airplanes - I would be so proud." He took a widely-circulated self-portrait with a stolen digital camera, and is suspected in over fifty burglary cases internationally. Who is this "barefoot burglar," an 18-year-old native of Camano Island?

**(Colton) Harris-Moore**

**Alt 2.** Math. The ratio of a son's age to the age of his father is two to seven. The son is eight years old. How old is the father?

**twenty-eight**

**Alt 3.** Human land use, especially industrial agriculture and urban sprawl, has exacerbated this natural process. This process can occur simultaneously with the chemical or physical breakdown of the minerals in rocks. Name the process that terrace-building and tree planting can limit.

**erosion**

**Alt 4.** The tribes in Chinua Achebe's novel Things Fall Apart delight when a phenomenon bringing this occurs, for it provides them with sustenance. Contrarily, in Laura Ingalls Wilder's book On the Banks of Plum Creek, a swarm of what descended upon her family's farm near Walnut Grove, Minnesota, destroying a year's wheat crop, and stripping the prairie bare of all vegetation?

**locusts (grasshoppers)**

**Alt 5.** What is the meaning of the prefix in the words audiophile, audiometer, and auditory?

**(to) hear (or listen)**