Comet Review
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1) The total mass of the asteroid belt is: Less than the mass of the moon.
2) The Trojan and Greek Asteroids are located: In the L4 and L5 Lagrange points of the Sun Jupiter system
3) The most common type of asteroid is: The C (carbonaceous) Type
4) We learn the mass of large objects by: Looking at the orbital parameters of their moons
5) Vesta is a particularly interesting asteroid because: It exhibits signs of past volcanism
6) The largest body in the asteroid belt, and formerly classified as a planet is: Ceres
7) Bode's law is a formula for: The radii of planetary orbits
8) What was the Tunguska event? A destructive meteor impact in Siberia
9) Meteorites have a lot of scientific value when found because they are so: Old
10) Pluto is the largest object in the: Kuiper Belt
11) What is the name of Pluto's Moon? Charon
12) Most comets originate in the: Oort Cloud
13) Comet tails always point: Away from the sun
14) Meteor Showers are caused by: Broken up comets due their thermal expansion in proximity of the sun.
15) The incredibly strong and rarified miracle material used to catch comet dust is called: Aerogel

Sun Review
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1) The Sun is the largest planet in our solar system: The sun is not a planet
2) The Sun is: Bigger than Jupiter
3) The Temperature of the sun's surface is: ~5000 degrees Kelvin
4) We know the sun must be harnessing nuclear energy because: Of how long its been burning
5) The dominant element in the sun is: Hydrogen
6) The sun's size is determined by hydrostatic equilibrium. The inward force is gravity. What is the balancing outward force? Radiation pressure from the explosive core
7) In the standard solar model, after the core comes the: Radiation Zone
8) After the Radiation Zone comes the: Convection Zone
9) Why does the transition from the radiation zone to the convection zone take place? As you move outward from the core, you cool, and eventually form atoms which absorb radiation
10) How do we know so much about the sizes of the different layers of the sun? Due to our knowledge about nuclear physics, Helioseismology, and Numerical Simulations
11) The smallest convection cells in the outermost layer of the suns interior are called granules. They are: About the size of Earth
12) Sun Spots are due to: Magnetic field lines become kinked due to differential rotation
13) Sun spots are: Cooler than the surrounding regions of the sun
14) Sun spot cycles are: A couple weeks
15) The Maunder Minimum: Is a period with less sun spots than usual
16) Sun spot activity has been reliably correlated with climate: False
17) The shiny halo around the sun only visible during a total solar eclipse is: The Corona, Chromosphere

18) Incredibly violent solar storms which could potentially knock out our telecommunications network are called: Solar Flares
19) E = mc^2 is a relationship between: Energy and rest mass
20) Why must the core be at least 10 million degrees kelvin to undergo fusion? Hydrogen nuclei repel each other, so you need high speed collisions in order for them to get close enough.
21) What are the inputs of a typical fusion reaction in the sun? 4 protons
22) What are the outputs of a typical fusion reaction in the sun? Energy, Neutrinos, Anti-particles, A helium nucleus
23) Neutrinos are characterized by their: Ability to travel huge distances through dense material without interacting
24) The solar neutrino problem was that: That we weren't measuring as many neutrinos from the sun on earth as expected
25) The solution to the solar neutrino problem is: Neutrinos "oscillate" between different neutrino species en route from the sun to earth

Stars and Cosmology Quiz
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1) The distance to the closest stars are found using: Gold Ol' fashion Stellar Parallax
2) If a star is 4 parsecs away, its parallax in the sky will be: about 1/4 of an arcsecond
3) Stars also exhibit proper, non-parallax motion in the sky: True
4) The component of a star's proper motion along the line of site is determined using: The Doppler Effect
5) Luminosity changes with distance d from an object proportional to: 1/d^2
6) What is perhaps THE fundamental challenge of astronomy: The fact that we only get 2 dimensional data but the universe is 3 dimensional
7) Which of these LOOKS brighter? An object with apparent brightness of 2
8) Which of these IS brighter? an object with an absolute magnitude of 12
9) The temperature of a star can be deduced from: The amount of certain elemental lines in its spectrum, Comparing its spectrum to a black body curve, and its color
10) Compared to red stars, blue stars are: hotter
11) OBAFGKM is classification of: The presence of certain elemental lines
12) Some stars' radius can be measured directly: True
13) Luminosity of a star is proportional to what power of its RADIUS: 2
14) Luminosity of a star is proportional to what power of its TEMPERATURE: 4
15) The largest stars have radii comparable to: Jupiter's Orbit
16) A Hertzsprung-Russell diagram measures: Temperature vs Luminosity
17) We can identify the luminosity of a star based of its temperature by seeing where it lies in the: Main Sequence of the HR diagram
18) Using direct measurements of close objects to calibrate tools to measure things further away is called the: Cosmic Distance Ladder
19) The width of a stars spectral lines determines its: Luminosity class
20) Observations of Binary star systems teach us about the involved stars': Radius, Mass, Orbital Speed
21) Most stars are: Red Dwarves
22) More massive stars are: More luminous
23) More massive stars: Don't live as long
24) The lowest rung on the cosmic distance ladder is: Radar Ranging

25) Variable Stars are good measuring sticks because of: The tight correlation between period and luminosity
26) Tully-Fisher is: A relationship between rotational speed and luminosity of a galaxy
27) Supernova are good measuring sticks because: We know their their absolute luminosity very well
28) The last rung on the cosmic distance ladder is: Hubble's Law
29) There is a "size" to the "observable universe" because: Due to Hubble's Law, things 14 billion light years away are receding faster than the speed of light
30) The fact that gravitational and inertial mass is the same is called the: Equivalence Principle
31) General Relativity states that gravity is the result of: Matter curving spacetime itself
32) Light would be bent by massive objects in the Newtonian theory of gravity: False
33) What is the name of "Surface of no Return" from a black hole? The Event Horizon
34) If you pointed a photon detector (ie a telescope) at a black hole, you'd see nothing: False
35) Tunnels of spacetime connecting distant regions of the universe are called: Worm Holes or Einstein Rosen Bridge.