**Four stars of different mass arrive on the Main Sequence of the Hertzsprung-Russell Diagram at the same time. Which star has a mass just about the same as the mass of the Sun?**

The star with spectral class B7

The star with spectral class F1

The star with spectral class G2

The star with spectral class M4

**What is the correct sequence for stellar evolution?**

Protostar, main sequence, white dwarf, red giant

Red giant, protostar, white dwarf, protostar

White dwarf, main sequence, red giant, protostar

Protostar, main sequence, red giant, white dwarf

**What is the escape velocity from the surface of Mars? Mars has a mass of 6.42 x 10^23 kilograms, and Mars' average radius is 3.37 x 10^6 meters. (The carat symbol means raising to a power. So 10^6 means 10 raised to the power of 6, which is 1 million.)**

5 kilometers per second

9 kilometers per second

13 Kilometers per second

17 kilometers per second

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17 kilometers per second



**Suppose a newly discovered star has a parallax angle of 0.4 seconds. How far away is this star?**

0.4 parsecs

2.5 parsecs

17 parsecs

40 parsecs



**Four stars of different mass arrive on the Main Sequence of the Hertzsprung-Russell Diagram at the same time. Which star will depart the Main Sequence first?**

The star with spectral class B2

The star with spectral class F7

The star with spectral class G9

The star with spectral class K8

**Pollux is a star with spectral class K0. Its absolute magnitude is +0.8, and its apparent magnitude is +1.16. How far away is Pollux?**

4.5 parsecs

11.8 parsecs

19.7 parsecs

27.4 parsecs



**Suppose a force of 51 Newtons is applied to an object with mass of 17 kilograms, initially at rest. How fast will it be moving 5 seconds later?**

17 meters per second

9.81 meters per second

27 meters per second

15 meters per second

**An astronaut has a mass of 65 kilograms at the surface of the Earth? What is his weight at the surface of the Earth?**

65 kilograms

374 Newtons, or 183 lb

638 Newtons, or 143 lb

529 Newtons, or 179 lb



**The astronaut in Question 11 goes to the Moon? What is his mass at the surface of the Moon?**

143 lb

24 lb

65 kilograms

24 kilograms

**Suppose the red shift of a galaxy indicates that the galaxy is moving away from us at 295 kilometers per second. Using Hubble's Law and the current estimate of Hubble's constant, about how far away is this galaxy?**

2.7 Megaparsecs

4.2 Megaparsecs

6.1 Megaparsecs

9.5 Megaparsecs



**Why does Mercury experience extreme high and low temperatures between daytime and nighttime?**

Its dense atmosphere creates a runaway greenhouse.

It has virtually no atmosphere to moderate temperatures over the globe.

It is so close to the Sun.

Mercury has no axial tilt, with its equator always exposed to direct sunlight.



**What process takes place within stars to generate the tremendous amount of energy**?

nuclear fusion

nuclear fission

neutrino - anti-neutrino annihilation

gravitational collapse



**Four stars of different mass arrive on the Main Sequence of the Hertzsprung-Russell Diagram at the same time. Which star has the smallest mass?**

The star with spectral class A2

The star with spectral class F9

The star with spectral class G7

The star with spectral class M3



**Suppose a star's surface temperature is 14,000 K. At what wavelength will this star emit the most light?**

852 nanometers

659 nanometers

514 nanometers

207 nanometers