Sci101 NAME _____

1) goto http://physicsworld.com/cws/article/news/45462
read the article.

A) What are the arguments the author uses to state that life is likely to be found on a planet orbiting a white dwarf.

B) Why life on the planet is only possible if the planet was kicked there after the explosion of the star into a white dwarf.

C) wikipedia white dwarf and describe briefly.

2)
Sirius is the brightest star in the nigh sky.
A) sky google it and find the constellation it is in

B) It is actually a binary system. We know the relationship between temperature of a star T, its radius R (size) and its luminosity L. $L = 4 \Pi R^2 \sigma T^4$
If Ls is the luminosity of the Sun, Rs the radius of the sun and Ts the temperature of the Sun we have :
$(L/Ls) = (R/Rs)^2 (T/Ts)^4$ So compute the radius of Sirius Rs given :
L=26 Ls (luminosity of Sirius compared to Sun's)
T=10,000 K = 1.72 Ts

hint: $(L/Ls) = (R/Rs)^2 (T/Ts)^4$ means $(26) = (R/Rs)^2 (1.72)^4$ solve for R/Rs
$R/Rs = \sqrt{(26 / (1.72^4))}$ (that means take the square root of the ratio $(26 / (1.72^4))$
find R/Rs so R = _____ Rs. Basic math.

C)

Do the same computation for Sirius B
L = 0.0024 Ls
T=15,000 kelvin = 2.59 Tsun
find R

3) sky google wild duck cluster
What kind of cluster is it ? _____. In which constellation? _____. It is a large cluster that contains about _____ stars. Its age is about _____ years.
What is the origin of the name ?