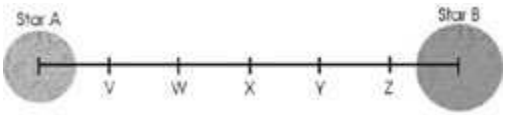
Name: _____

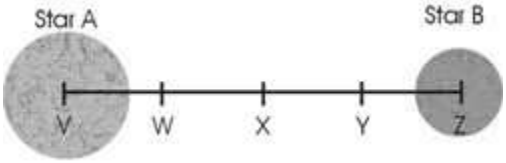
Eclipsing Binary Simulator – Posttest

Answer the following questions.

Question 1: If Star A has a mass of 2 $M_\odot$ and star B has a mass of 4 $M_\odot$, the center of mass will be at which letter position? _____



Question 2: If Star A has a mass of 1 $M_\odot$ and the center of mass is at position **Y**, what is the mass of star B? _____ $M_\odot$



Question 3: A 6000 K star would appear to be …

a) orange
b) red
c) blue
d) yellow
e) white

Question 4: If a yellow giant star has the same surface temperature as the sun ($T = 2T_\odot$) and a radius twice that of the sun ($R = 2R_\odot$), what will its luminosity be?

_____ $L_\odot$

Question 5: A grandfather clock starts exactly at noon. Imagine that you make measurements of the height of the tip of the minute hand and create a periodic graph of your data (much like a light curve). If you make an observation at 4:20 pm, what would be the phase of this observation?

a) 0.000
b) 0.250
c) 0.333
d) 0.500
e) 0.750

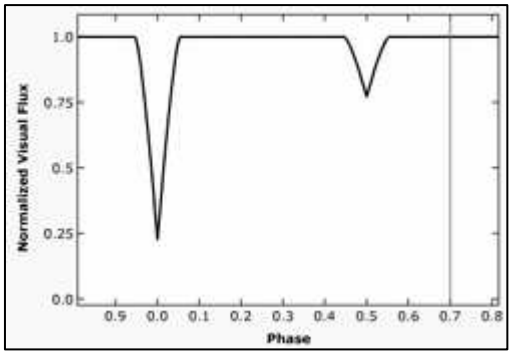
Question 6: The binary system below has an inclination of 90°. What type of eclipse will be seen when the *white* star B cuts in front of the *blue* star A?

a) a deep, flat eclipse
b) a shallow, pointed eclipse
c) a deep, pointed eclipse
d) a shallow, flat eclipse

Question 7: A binary system is most likely to be an eclipsing binary if it has …

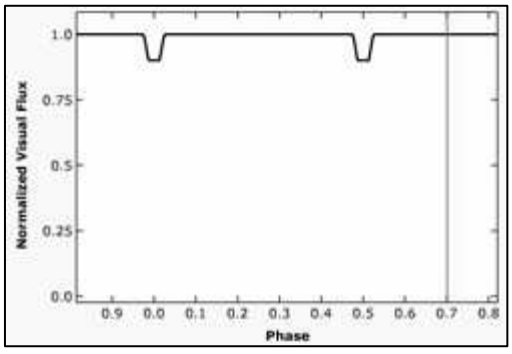
a) small inclination and small stellar radii.
b) large inclination and small stellar radii.
c) small inclination and large stellar radii.
d) large inclination and large stellar radii.

Question 8: From the eclipsing binary light curve shown the right, one can conclude that the stars have circular orbits and ...



a) the same surface temperatures and radii.
b) different surface temperatures and different radii.
c) the same radii but different surface temperatures.
d) the same surface temperatures but different radii.

Question 9: From the eclipsing binary light curve shown to the right, one can conclude that the stars ...



a) have a small separation compared to their radii.
b) have a large separation compared to their radii.