Cardiac Physiology (Quiz #5)

For questions 1-3, match the event with the corresponding phase of the cardiac cycle. Answers can be used more than once.

A) atrial systole
B) ventricular isovolumetric contraction
C) ventricular rapid ejection
D) ventricular reduced ejection
E) ventricular isovolumetric relaxation
F) rapid ventricular filling
G) reduced ventricular filling

1. period of time between the S and T waves of the ECG  D
2. opening of the mitral valve marks the beginning of this phase  F
3. the a wave of the venous pulse tracing  A

4. What is the ejection fraction if the cardiac output is 7,200 ml/min, the end systolic volume is 60 ml, and the R-R interval of the ECG is 750 msec? (rounded to the closest whole number)

A) 0.80  
B) 0.50  
C) 0.60  
D) 0.58  
E) cannot be calculated

5. Which of the following statements regarding cardiac function is false?

A) During diastolic filling, doubling the ventricular radius at a constant pressure results in a two-fold increase in wall tension.
B) Preload is an important determinant of stroke volume.
C) Cardiac muscle is unique in that it normally operates at sarcomere lengths significantly less than Lmax.
D) Under conditions of constant afterload, contractility, and heart rate, the curves relating either stroke volume or cardiac output to changes in end diastolic volume are the same.
E) The initial velocity of shortening of isolated cardiac muscle increases as the afterload increases.