1. A thorough echocardiographic evaluation of patent foramen ovale and atrial septal defect includes all but which of the following?
   a. Detection and quantification of size and shape of the defects
   b. Degree and mechanisms of mitral and aortic regurgitation
   c. The rims of tissue surrounding the defect
   d. The degree and direction of shunting
   e. Remodeling and changes in size and function of the cardiac chambers and pulmonary circulation

2. Which of the following statements is not true regarding ostium secundum atrial septal defects?
   a. It most often occurs as a result of a true deficiency of septum primum tissue
   b. The superior and posterior margins of the defect are composed of the septum secundum
   c. It is the least common form of a true ASD
   d. The anterior margin is composed of the left venous valve of the IVC
   e. The inferior margin is composed of the septum primum and left venous valve of the IVC
   f. d and e
   g. c and d

3. An atrial septal aneurysm (ASA) is a redundancy or saccular deformity of the atrial septum and is associated with increased mobility of atrial septal tissue. ASA has been associated with
   a. The presence of a PFO and increased size of a PFO
   b. An increased prevalence of cryptogenic stroke and other embolic events
   c. Multiple septal fenestrations
   d. All of the above
   e. a and b only
4. Which of the following statements regarding imaging techniques for ASD and PFO is true:

   a. ICE is superior to TEE in evaluating anterior aspects of the IAS
   b. TEE is superior to ICE in image quality
   c. ICE is superior to TEE in image quality in the far field views
   d. TTE can be used as the only imaging modality in pediatric patients < 40 kg
   e. TTE is superior in imaging the lower rim of the IAS after device deployment

5. Echocardiography is critically important in patients undergoing transcatheter closure of an ASD/PFO because

   a. It enables appropriate patient selection
   b. It provides real time procedural guidance
   c. It establishes device efficacy and can recognize procedural complications
   d. It provides long term follow-up
   e. All of the above

6. The technique which uses power M-mode Doppler interrogation of the basal cerebral arteries to detect microbubbles that have crossed right to left into the systemic circulation is

   a. Cerebral angiography with contrast
   b. Gadolinium-enhanced MRI
   c. Transcranial Doppler
   d. TTE/TEE with saline contrast, with and without Valsalva

7. With transthoracic imaging from the subxiphoid long axis view (frontal) or left anterior oblique view, the right pulmonary vein ASD rim, the ASD diameter, and atrial septal length can be assessed.

   a. True
   b. False

8. Secundum ASDs have a variable amount of surrounding tissue that borders the defect, and these rims of tissue are named for the corresponding surrounding adjacent anatomic structures. There are six named rims, including all but which of the following?

   a. Aortic rim – the superior/anterior rim between the ASD and the aortic valve annulus
   b. AV valve rim – the inferior/anterior rim between the ASD and the atrioventricular valves
   c. Svc rim – the superior/posterior rim between the ASD and the SVC
   d. Left lower pulmonary vein rim (LLPV) – posterior rim between the ASD and the LLPV
e. Right upper pulmonary vein (RUPV) rim – the posterior rim between the ASD and the RUPV
f. IVC rim – the inferior/posterior rim between the ASD and the IVC
g. Posterior rim – the posterior rim between the ASD and the posterior atrial wall

9. Which of the following is not identified by the authors as a risk factor for embolization of an ASD closure device?
   a. Severe tricuspid regurgitation  
   b. Undersized ASD device 
   c. Oversized ASD device  
   d. Deficient rims of surrounding tissue 
   e. Device malpositioning 
   f. Dilated coronary sinus  
   g. a,c,f

10. Device erosion is a rare but potentially fatal event, and can result in hemopericardium, tamponade, aortic fistula, and/or death. Although the precise cause of erosion is unknown, possible risk factors have been delineated. Which of the following is not felt to represent a risk for ASD device erosion?
   a. Deficient aortic rim in multiple views 
   b. Oversized ASD device 
   c. Dynamic ASD with >50% change in size of the defect 
   d. Fenestrated defects  
   e. Malaligned defects