1. You move your transducer to scan the AC joint at the completion of a shoulder exam. The image below is on your screen. Which of the following instrument adjustments would be the most appropriate next step to optimize the image?
   a. Increase the gain
   b. Decrease the depth
   c. Lower the frequency
   d. Adjust the gray map

2. What is the cause of the hyperechoic line at the arrow?
   a. Attenuation
   b. Refraction
   c. Reverberation
   d. Reflection

3. Which direction is the flow going in the center vessel (red)?
   a. Toward the heart
   b. Away from the heart
   c. Toward the transducer
   d. Away from the transducer

4. How would this structure (arrowheads) best be characterized?
   a. Fibrillar
   b. Honeycomb
   c. Starry night
   d. Bunched broom
5. Which of the following would most improve the ergonomics and the effectiveness of the examiner (in the salmon colored shirt) while performing this shoulder examination?
   a. Change examiner hands
   b. Switch probes
   c. Place patient adjacent to machine
   d. Supinate patient forearm

6. In the picture, the linear transducer is moved along the long axis of the transducer to optimize the ultrasound image, as shown by the trapezoids below. This motion of the probe is referred to as:
   a. Rotation
   b. Tilt / Wag
   c. Compression
   d. Heel-Toe

7. In the accompanying ultrasound image, indicate the needle approach with respect to the ultrasound transducer.
   a. In-plane
   b. Transverse
   c. Short axis
   d. Oblique

8. Which of the following ultrasound setting changes is most likely to help with image optimization for an intra-articular hip injection (target marked with an asterisk) in the accompanying image?
   a. Adding multiple focal zones
   b. Using higher frequencies
   c. Increasing the gain
   d.Decreasing the depth
9. What structure is indicated by the asterisk in the accompanying image taken at the elbow?
   a. Olecranon fat pad
   b. Common flexor/pronator tendon origin
   c. Superficial radial nerve
   d. Ulnar collateral ligament

10. What nerve is indicated by the arrow in the accompanying image taken along the proximal forearm?
    a. Medial antebrachial cutaneous
    b. Musculocutaneous
    c. Posterior interosseous
    d. Superficial radial

11. Anesthetic blockade or ablation of the nerve marked with arrows can lead to numbness in the:
    a. Posterior shoulder
    b. Lateral forearm
    c. Antecubital fossa
    d. Medial forearm

12. Injection of botulinum toxin into the muscle marked with the X would be expected to decrease tone and primarily improve motion in which part of the upper limb?
    a. Thumb
    b. Wrist
    c. Forearm
    d. Finger
13. Watch the hip joint injection video to determine the proper code to use for the procedure.
   a. 20611
   b. 76881
   c. 20605
   d. 76882

14. You perform an ultrasound examination of the shoulder and save the following images. How would you code for this procedure?
   a. 76492
   b. 76881
   c. 20610
   d. 76882

15. In this long axis view of the femoro-acetabular joint, the arrow in the picture refers to which structure?
   a. Femoral nerve
   b. Psoas tendon
   c. Iliopsoas bursa
   d. Hip labrum

16. In this tranverse view over the greater trochanter at the level of the gluteus medius insertion, the structure marked by an "*" refers to the:
   a. Gluteus maximus muscle
   b. Gluteus minimus tendon
   c. Semitendinosus tendon
   d. Gluteus medius muscle
17. The abnormal hyperechoic density demarcated by the arrow in this image is most likely to represent what anatomical structure?
   a. Subcutaneous air
   b. Calcaneous fracture
   c. Calcific tendon
   d. Enthesophyte

18. This abnormal image of an Achilles tendon in axial section is most compatible with which of the following diagnoses?
   a. Intra-tendinous calcification
   b. Degenerative tendinosis
   c. Full thickness rupture
   d. Lateral plantaris migration

19. Which of the following terms best describes the echotexture of the structure labeled A?
   a. Fibrillar
   b. Ascicular
   c. Pennate
   d. Starry night

20. What is responsible for the hyperchoic region (arrow) deep to elliptical shaped structure seen in this image?
   a. Posterior acoustic shadow
   b. Increased through transmission
   c. Reverberation
   d. Muscle atrophy