

MULTIPLE CHOICE

AXIAL RESOLUTION - PRACTICE SET

PROPOSED FOR REVIEW - questions are the author's verbatim Q&A; distractors are auto-selected from other answers in the same bank and must be checked by a subject-matter reviewer (a distractor could coincidentally be correct). Not authoritative assessment content.

1. What measures the ability to display two closely spaced structures that are parallel to the sound beam axis?

- A. Contrast resolution
- B. Axial resolution
- C. Temporal resolution
- D. Lateral resolution

2. What units are used for axial resolution?

- A. Frames per second
- B. Hertz
- C. Units of distance, such as mm or cm
- D. dB/cm

3. What determines axial resolution?

- A. Spatial pulse length
- B. Display bit depth
- C. Pulse repetition frequency
- D. Transducer footprint only

4. What determines spatial pulse length?

- A. The receiver gain only
- B. The scan converter only
- C. Both the sound source and the medium
- D. The display monitor only

5. What type of pulse improves axial resolution?

- A. A wider pulse
- B. A higher-amplitude pulse
- C. A longer pulse
- D. A shorter pulse

6. True or False? Axial resolution is related to pulse duration.

- A. False
- B. True

7. Which term is another name for axial resolution?

- A. Temporal resolution
- B. Range resolution
- C. Lateral resolution
- D. Elevational resolution

8. Is axial resolution adjustable by the sonographer during routine scanning?

- A. Yes
- B. No

9. What mnemonic lists common alternate names for axial resolution?

- A. LARD: lateral, axial, range, Doppler
- B. LATA: longitudinal, angle, temporal, axial
- C. LARRD: longitudinal, axial, range, radial, depth

10. What does a lower numerical value for axial resolution indicate?

- A. Longer pulses
- B. Greater beam width
- C. Lower image quality
- D. Shorter pulses

11. Which pulse length creates a more accurate axial image?

- A. Longer pulses
- B. Shorter pulses
- C. Higher-amplitude pulses
- D. Lower-frequency pulses only

12. What is the axial resolution equation in soft tissue when frequency is in MHz?

- A. 1.54 mm multiplied by the number of cycles, divided by frequency
- B. 0.77 mm multiplied by the number of cycles, divided by frequency
- C. Frequency divided by 0.77 mm times the number of cycles
- D. Number of cycles divided by 13 microseconds

13. What pulse characteristic determines axial resolution?

- A. Pulse length
- B. Beam steering angle
- C. Receiver gain
- D. Pulse repetition frequency

14. How are shorter ultrasound pulses created?

- A. Higher amplitude and more gain
- B. Higher frequency and less ringing
- C. Longer wavelength and more cycles
- D. Lower frequency and more ringing

15. True or False? Ringing is reduced by damping the crystal before it is excited.

- A. True
- B. False

16. Shorter wavelengths are associated with which type of frequency?

- A. Zero frequency
- B. Higher frequency
- C. Lower frequency
- D. Unchanged frequency