

MULTIPLE CHOICE

RANGE EQUATION - 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. How is time of flight related to reflector depth?

- A. Equal only at 1 cm
- B. Directly related
- C. Unrelated
- D. Inversely related

2. What happens to time of flight when pulse travel distance increases?

- A. It becomes zero
- B. It decreases
- C. It increases
- D. It stays the same

3. What pulse travel distance produces a shorter time of flight?

- A. A smaller distance
- B. The maximum imaging depth
- C. A larger distance
- D. A round trip of twice the depth

4. What is the average speed of sound in soft tissue?

- A. 154 mm/microsecond
- B. 0.77 mm/microsecond
- C. 1.54 mm/microsecond
- D. 1.54 cm/microsecond

5. How are time of flight and the distance a pulse travels related?

- A. Equal only in air
- B. Unrelated
- C. Inversely related
- D. Directly related

6. How is reflector depth calculated from go-return time in soft tissue?

- A. 1.54 mm/microsecond multiplied by go-return time, multiplied by 2
- B. 1.54 mm/microsecond divided by go-return time
- C. Go-return time divided by 1.54 mm/microsecond, then multiplied by 2
- D. 1.54 mm/microsecond multiplied by go-return time, divided by 2

7. What is the 13-microsecond rule in soft tissue?

- A. Each 13 microseconds corresponds to 1 mm of reflector depth
- B. Each 13 microseconds of go-return time corresponds to 1 cm of reflector depth
- C. Each 13 microseconds corresponds to 1 cm of total round-trip distance
- D. Each 13 microseconds corresponds to 13 cm of reflector depth

8. If go-return time is 39 microseconds, what is the reflector depth in soft tissue?

- A. 2 cm
- B. 6 cm
- C. 1 cm
- D. 3 cm

9. If go-return time is 13 microseconds, what is the reflector depth in soft tissue?

- A. 0.5 cm
- B. 2 cm
- C. 13 cm
- D. 1 cm

10. If go-return time is 26 microseconds, what is the reflector depth in soft tissue?

- A. 1 cm
- B. 2 cm
- C. 3 cm
- D. 4 cm

11. What is the total pulse travel distance for a reflector depth of 3 cm?

- A. 3 cm
- B. 6 cm
- C. 1.5 cm
- D. 9 cm

12. True or False? The total distance that a pulse travels is three times the reflector depth.

- A. True
- B. False

13. What is the total pulse travel distance for a reflector depth of 4 cm?

- A. 4 cm
- B. 8 cm
- C. 2 cm
- D. 12 cm

14. How is pulse repetition period related to maximum imaging depth?

- A. Inversely related
- B. Equal to frequency
- C. Directly related
- D. Unrelated

15. How is pulse repetition period calculated in soft tissue?

- A. 13 microseconds divided by imaging depth in cm
- B. Imaging depth in cm multiplied by 13 microseconds
- C. Imaging depth in cm divided by 13 microseconds
- D. Imaging depth in cm multiplied by 77,000 Hz

16. What happens to PRP when the depth of view is shallow?

- A. PRP is long
- B. PRP is short
- C. PRP is zero
- D. PRP is unrelated to depth

17. What happens to PRP when the depth of view is deep?

- A. PRP is long
- B. PRP equals frequency
- C. PRP is zero
- D. PRP is short

18. What is the PRP when the depth of view is 12 cm in soft tissue?

- A. 924,000 microseconds
- B. 12 microseconds
- C. 77 microseconds
- D. 156 microseconds

19. How is pulse repetition frequency related to imaging depth?

- A. Directly related
- B. Inversely related
- C. Unrelated
- D. Equal to PRP

20. What happens to PRF when the depth of view is shallow?

- A. PRF is high
- B. PRF equals PRP
- C. PRF is low
- D. PRF is zero

21. What happens to PRF when the depth of view is deep?

- A. PRF is high
- B. PRF is low
- C. PRF is zero
- D. PRF is unrelated to PRP

22. What is the maximum PRF equation for soft tissue when depth is measured in centimeters?

- A. 13 multiplied by imaging depth
- B. Imaging depth divided by 77,000
- C. 77,000 divided by imaging depth
- D. 1.54 divided by imaging depth