1. Draw the approximate A mode representation of this image before time gain compensation.

2. Draw the approximate A mode representation of this image after time gain compensation.

3. Draw the approximate B mode representation of this image.

4. Draw the approximate M mode representation of this image.

5. Draw and compare velocity plots of a healthy artery and a somewhat clogged artery over time.

6. Explain the idea of a mirror image artifact and why it happens.

7. Explain the idea of a comet tail artifact.

8. Explain qualitatively (draw!) the idea behind the doppler ultrasound.

9. What is the duty factor? Calculate it for a 1MHz signal that rings down in 3 cycles that needs to image something 5 cm away.

10. What frequency will you detect if you send out a frequency of 1MHz parallel to a scatterer moving at 1 m/s toward you? Away from you?

11. What frequency will you detect if you send out a frequency of 1MHz perpendicular to a scatterer moving at 1 m/s?

12. What frequency will you detect if you send out a frequency of 1MHz at a 60 degree angle to a scatterer moving at 1m/s toward you?

13. If you want to image something 5 cm away, how often can you pulse? Why?

14. What does "beating" have to do with doppler ultrasound?

15. When do you have to worry about aliasing with respect to pulse repetition frequency?

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