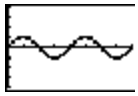
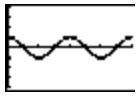
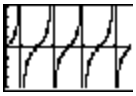
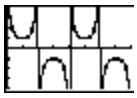
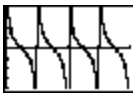
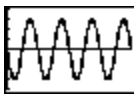
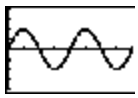
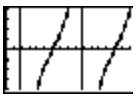
Plotting

1. a. 2π b. 2π c. π d. sec:2π, csc:2π, cot: π
2. a. right b. left c. none d. none e. none f. left
3. a. p:2π, A:3, ps: none b. p: π, A:5, ps: none c. p: $\pi/3$, A:4, ps: none
d. p:2π, A:2, ps: π to the left e. p:180^o, A:1/2, ps:5^o to the right
   f. p: 2π, A:1, ps:2π to the left g. p:25.13,A:.25, ps:1 radian to the left

4. a. sin(1/2 x) b. cos x c. tan(1/3 x) d. neither e. sin(2x)
   f. neither

5. a.  b.  c. 

6. a.  b.  c. 

7. a.  b.  c. 

8. a. $y = 4\sin(2x-\pi/2)$ b. $y = -1/2 \sin(6x-12)$

9. a. F b. F c. T d. T e. F f. F

10. a. $v = \lambda/P$
    b. $k=2\pi/\lambda$
    c. $v = f \lambda$
    d. $\omega = 2\pi/\lambda * v$
    e. $\omega = 2\pi f$

11. a. The longer the wave the deeper the sound.
    b. The higher the amplitude the louder the sound.

13. a. Sound wave is produced by a microphone and modulates the carrier signal. The carrier wave is produced by an oscillator and carries the sound signal.

b. AM: Amplitude is modulated.
FM. Frequency is modulated

c. Reflect off the ground and ionosphere; 2.3-26.1 MHz; international broadcasts, worldwide communication.

d. Travel short distances and reflect off ionosphere, then bounce off ground or large objects; AM radio.

e. Achieved by a surface wave; 150-300 kHz; navigation.

f. Bounce off the ground or large objects; 87-100 MHz; FM radio.

14. broadcast; modulator; transmitter; demodulator; listener.

15. Ultraviolet, visible, infrared, gamma-ray, x-ray, microwave, radio, etc.

16. 4000-7000 Angstroms

17. The primary colors: red, green and blue combine equally.

18. 299,792 km/sec or 186,000 m/sec.

19. Light amplification by stimulated emission of radiation.