Section 5.0 & 5.1

G9C04 (B)
How does antenna gain stated in dBi compare to gain stated in dBd for the same antenna?
A. dBi gain figures are 2.15 dB lower than dBd gain figures
B. dBi gain figures are 2.15 dB higher than dBd gain figures
C. dBi gain figures are the same as the square root of dBd gain figures multiplied by 2.15
D. dBi gain figures are the reciprocal of dBd gain figures + 2.15 dB
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G9C15 (A)
What is meant by the terms dBi and dBd when referring to antenna gain?
A. dBi refers to an isotropic antenna, dBd refers to a dipole antenna
B. dBi refers to an ionospheric reflecting antenna, dBd refers to a dissipative antenna
C. dBi refers to an inverted-vee antenna, dBd refers to a downward reflecting antenna
D. dBi refers to an isometric antenna, dBd refers to a discone antenna
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G4E01 (C)
What is the purpose of a capacitance hat on a mobile antenna?
A. To increase the power handling capacity of a whip antenna
B. To allow automatic band changing
C. To electrically lengthen a physically short antenna
D. To allow remote tuning
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G4E02 (D)
What is the purpose of a corona ball on an HF mobile antenna?
A. To narrow the operating bandwidth of the antenna
B. To increase the "Q" of the antenna
C. To reduce the chance of damage if the antenna should strike an object
D. To reduce RF voltage discharge from the tip of the antenna while transmitting
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G4E05 (C)
Which of the following most limits an HF mobile installation?
A. "Picket fencing"
B. The wire gauge of the DC power line to the transceiver
C. Efficiency of the electrically short antenna
D. FCC rules limiting mobile output power on the 75-meter band
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G4E06 (C)
What is one disadvantage of using a shortened mobile antenna as opposed to a full-size antenna?
A. Short antennas are more likely to cause distortion of transmitted signals
B. Short antennas can only receive circularly polarized signals
C. Operating bandwidth may be very limited
D. Harmonic radiation may increase
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G9B01 (B)
What is one disadvantage of a directly fed random-wire HF antenna?
A. It must be longer than 1 wavelength
B. You may experience RF burns when touching metal objects in your station
C. It produces only vertically polarized radiation
D. It is more effective on the lower HF bands than on the higher bands

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G9B02 (B)
Which of the following is a common way to adjust the feed-point impedance of a quarter wave ground-plane vertical antenna to be approximately 50 ohms?
A. Slope the radials upward
B. Slope the radials downward
C. Lengthen the radials
D. Shorten the radials
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G9B03 (D)
Which of the following best describes the radiation pattern of a quarter-wave, ground-plane vertical antenna?
A. Bi-directional in azimuth
B. Isotropic
C. Hemispherical
D. Omnidirectional in azimuth
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G9B04 (A)
What is the radiation pattern of a dipole antenna in free space in a plane containing the conductor?
A. It is a figure-eight at right angles to the antenna
B. It is a figure-eight off both ends of the antenna
C. It is a circle (equal radiation in all directions)
D. It has a pair of lobes on one side of the antenna and a single lobe on the other side
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G9B05 (C)
How does antenna height affect the horizontal (azimuthal) radiation pattern of a horizontal dipole HF antenna?
A. If the antenna is too high, the pattern becomes unpredictable
B. Antenna height has no effect on the pattern
C. If the antenna is less than 1/2 wavelength high, the azimuthal pattern is almost omnidirectional
D. If the antenna is less than 1/2 wavelength high, radiation off the ends of the wire is eliminated
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G9B06 (C)
Where should the radial wires of a ground-mounted vertical antenna system be placed?
A. As high as possible above the ground
B. Parallel to the antenna element
C. On the surface of the Earth or buried a few inches below the ground
D. At the center of the antenna
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G9B07 (B)
How does the feed-point impedance of a 1/2 wave dipole antenna change as the antenna is lowered below 1/4 wave above ground?
A. It steadily increases
B. It steadily decreases
C. It peaks at about 1/8 wavelength above ground
D. It is unaffected by the height above ground
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G9B08 (A)

How does the feed point impedance of a 1/2 wave dipole change as the feed point is moved from the center toward the ends?
A. It steadily increases
B. It steadily decreases
C. It peaks at about 1/8 wavelength from the end
D. It is unaffected by the location of the feed point
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G9B09 (A)
Which of the following is an advantage of a horizontally polarized as compared to a vertically polarized HF antenna?
A. Lower ground reflection losses
B. Lower feed-point impedance
C. Shorter radials
D. Lower radiation resistance
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G9B10 (D)
What is the approximate length for a 1/2 wave dipole antenna cut for 14.250 MHz?
A. 8 feet
B. 16 feet
C. 24 feet
D. 32 feet
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G9B11 (C)
What is the approximate length for a 1/2 wave dipole antenna cut for 3.550 MHz?
A. 42 feet
B. 84 feet
C. 131 feet
D. 263 feet
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G9B12 (A)
What is the approximate length for a 1/4 wave vertical antenna cut for 28.5 MHz?
A. 8 feet
B. 11 feet
C. 16 feet
D. 21 feet
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G9D01 (A)
Which of the following antenna types will be most effective as a Near Vertical Incidence Skywave (NVIS) antenna for short-skip communications on 40 meters during the day?
A. A horizontal dipole placed between 1/10 and 1/4 wavelength above the ground
B. A vertical antenna placed between 1/4 and 1/2 wavelength above the ground
C. A left-hand circularly polarized antenna
D. A right-hand circularly polarized antenna
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G9D03 (C)
In which direction is the maximum radiation from a portable VHF/UHF “halo” antenna?
A. Broadside to the plane of the halo
B. Opposite the feed point
C. Omnidirectional in the plane of the halo

D. Toward the halo’s supporting mast
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G9D04 (A)
What is the primary purpose of antenna traps?
A. To permit multiband operation
B. To notch spurious frequencies
C. To provide balanced feed-point impedance
D. To prevent out-of-band operation
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G9D08 (B)
How does a “screwdriver” mobile antenna adjust its feed-point impedance?
A. By varying its body capacitance
B. By varying the base loading inductance
C. By extending and retracting the whip
D. By deploying a capacitance hat
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G9D09 (A)
What is the primary use of a Beverage antenna?
A. Directional receiving for low HF bands
B. Directional transmitting for low HF bands
C. Portable direction finding at higher HF frequencies
D. Portable direction finding at lower HF frequencies
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G9D11 (D)
Which of the following is a disadvantage of multiband antennas?
A. They present low impedance on all design frequencies
B. They must be used with an antenna tuner
C. They must be fed with open wire line
D. They have poor harmonic rejection
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G9D12 (A)
What is the common name of a dipole with a single central support?
A. Inverted V
B. Inverted L
C. Sloper
D. Lazy H
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G9D13 (C)
What is the combined vertical and horizontal polarization pattern of a multi-wavelength, horizontal loop antenna?
A. A figure-eight, similar to a dipole
B. Four major loops with deep nulls
C. Virtually omnidirectional with a lower peak vertical radiation angle than a dipole
D. Radiation maximum is straight up
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