Answers. With these, you should be able to fill in the figures yourself.

1. Fort Yukon, Alaska

a. theta = 23.5 degrees
b. A_E = 23.5 degrees
c. A_S = 47 degrees
d. A_W = 0 degrees

e. The Sun circles the horizon without actually rising.

2. Clarence Town, Bahamas

a. theta = 66.5 degrees
b. A_E = 66.5 degrees
c. A_S = 90 degrees
d. A_W = 43 degrees

e. Yes, the Sun is directly overhead for just one day, the Summer Solstice.

3. Kisumu, Kenya

a. theta = 90.0 degrees
b. A_E = 90.0 degrees
c. A_S = 113.5 degrees
d. A_W = 66.5 degrees

e. On the Summer Soltice, the Sun is 66.5 degrees above the NORTHERN horizon.

4. Armidale, NSW, Australia

a. theta = 59.5 degrees
b. A_E = 59.5 degrees
c. A_S = 83 degrees (assuming the northern summer solstice)
d. A_W = 36 degrees

e. South of the equator, theta is measured from the NORTHERN horizon. The same is true for the altitudes of the Sun.

Note that in all of the above answers, A_E = theta, and the difference between A_S and A_W is always 47 degrees.