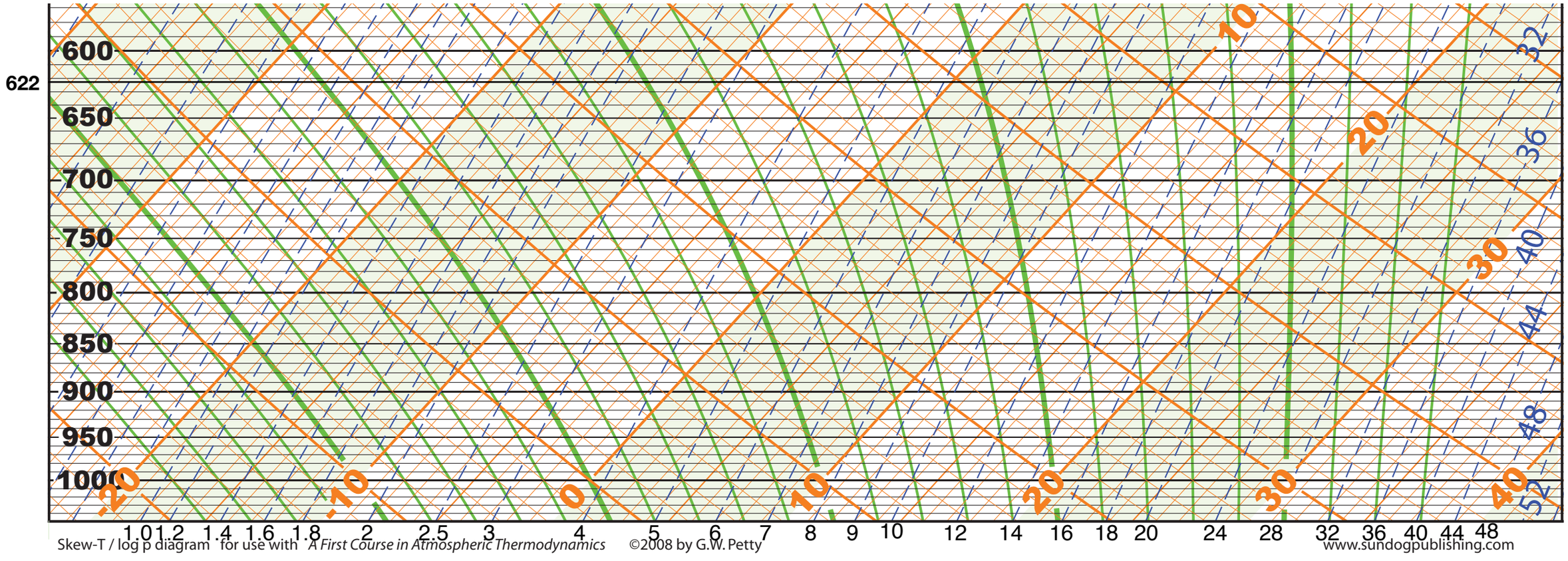
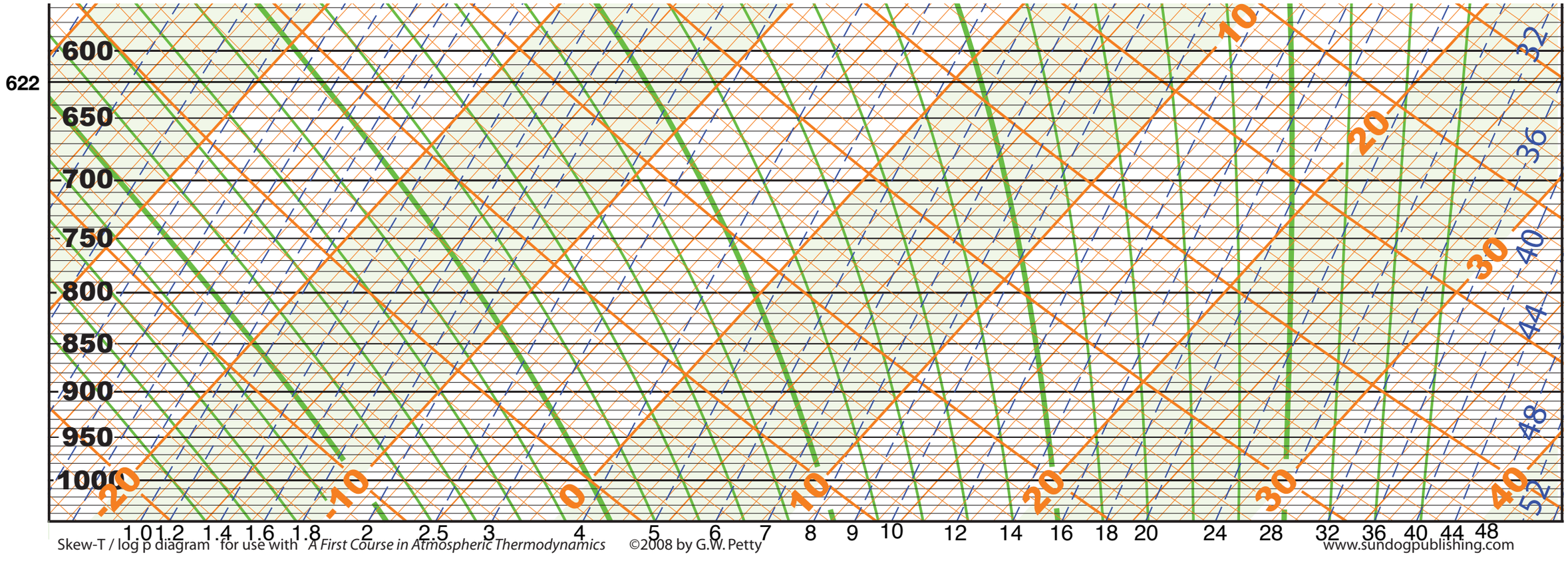
skew-T log p diagram



- **Given T, RH, and p:**
  - **Get theta, w, w_s, Td, e, e_s**

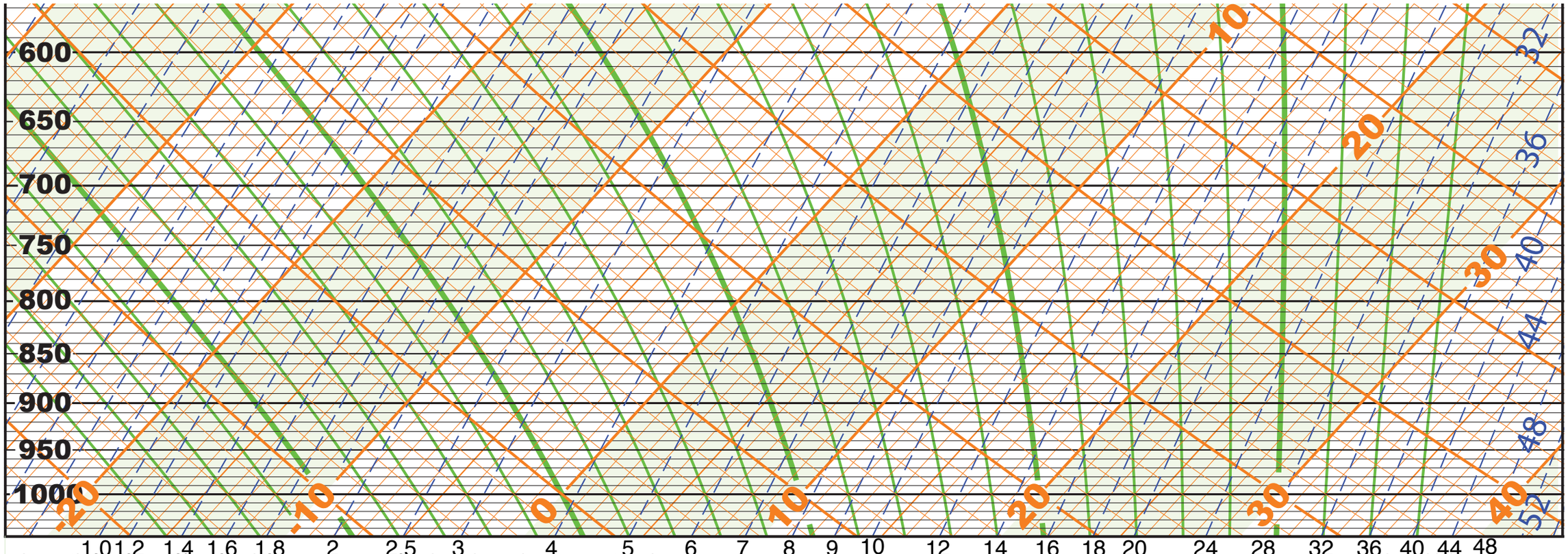
1. **theta**
2. **$w_s(T,p)$**
3. **Use RH = w/w_s to get w**
4. **Use w = $w_s(Td,p)$ to get Td**
5. **Use $w_s(T,p) = 0.622 * e_s(T) / p$ at p at p=622 mb to get $w_s(T,p=622) = 0.001\ e_s(T)$, or $e_s(T) = w_s(T,p=622)$ g/kg. Try it for T=0 C.**
6. **Use RH = e/e_s to get e.**



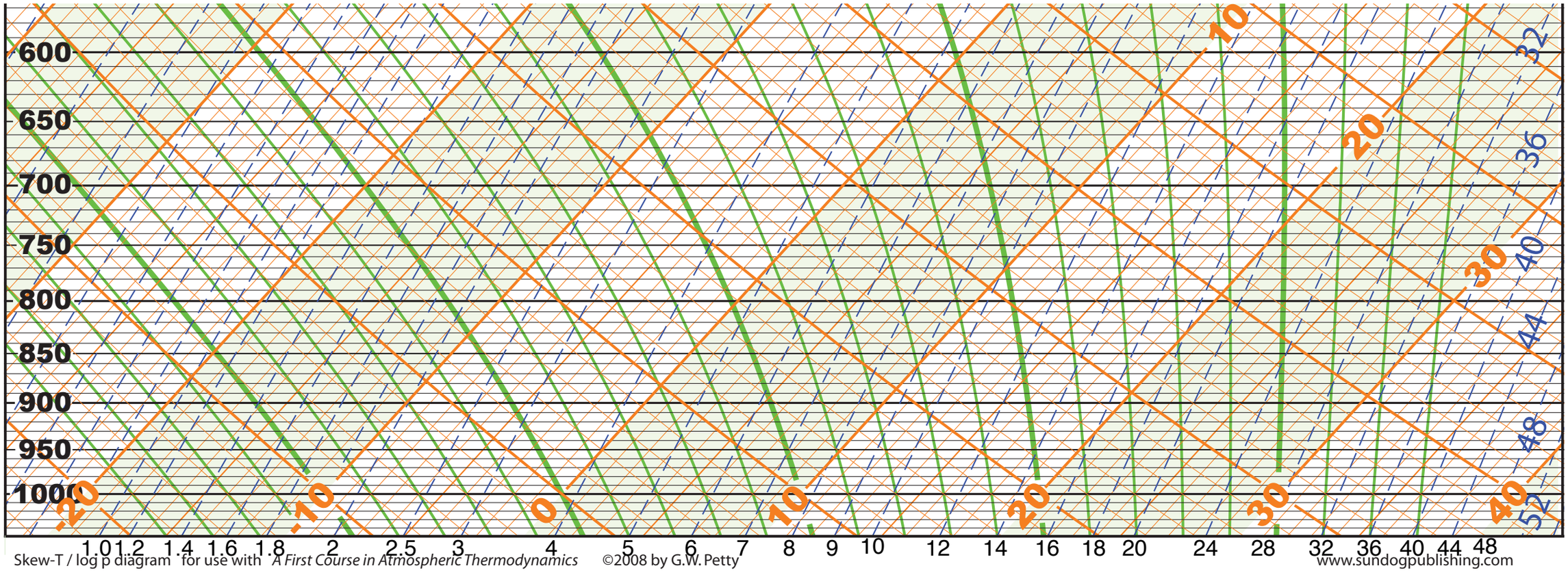
- **Given T, RH, and p:**
  - **Get theta, w, w_s, Td, e, e_s**

p =1000 mb, where T =20 C and relative humidity = 50%

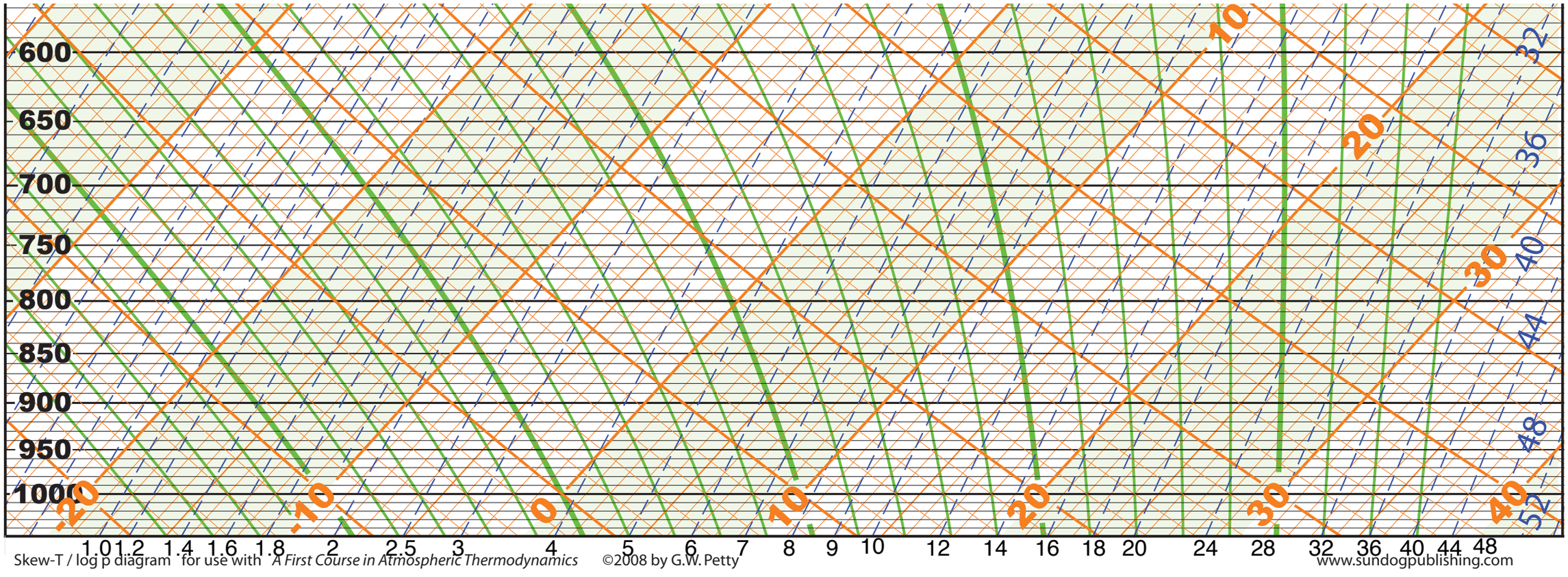
1. **theta**
2. **w_s(T,p)**
3. **Use RH = w/w_s to get w**
4. **Use w = w_s(Td,p) to get Td**
5. **Use w_s(T,p) = 0.622 * e_s(T) / p at p at p=622 mb to get w_s(T,p=622) = 0.001 e_s(T), or e_s(T) = w_s(T,p=622) g/kg. Try it for T=0 C.**
6. **Use RH = e/e_s to get e.**



- **Given theta and w at one p:**
  - **Get theta and w at other p via adiabatic ascent:**
    - **Both are constant**
    - **Theta = constant means T is given by the dry adiabat through the surface T.**
    - **w = constant means T_d is given by the $w_s(T_d,p)$ isoline through the surface w.**



- **Given theta, w, and p at any level:**
  - **Get T, w_s, T_d, e, e_s, RH**
    - **T: Read it from dry adiabat at given p.**
    - **T_d: Read it from $w=w_s(T_d,p)$ at given p.**
    - **w_s: Read it from $w_s(T,p)$ at given p.**
    - **RH: $r = w/w_s$.**
    - **e_s: Read it from $w_s(T,p)$ at p=622 mb.**
    - **e: Read it from $w_s(T_d,p)$ at p=622 mb.**



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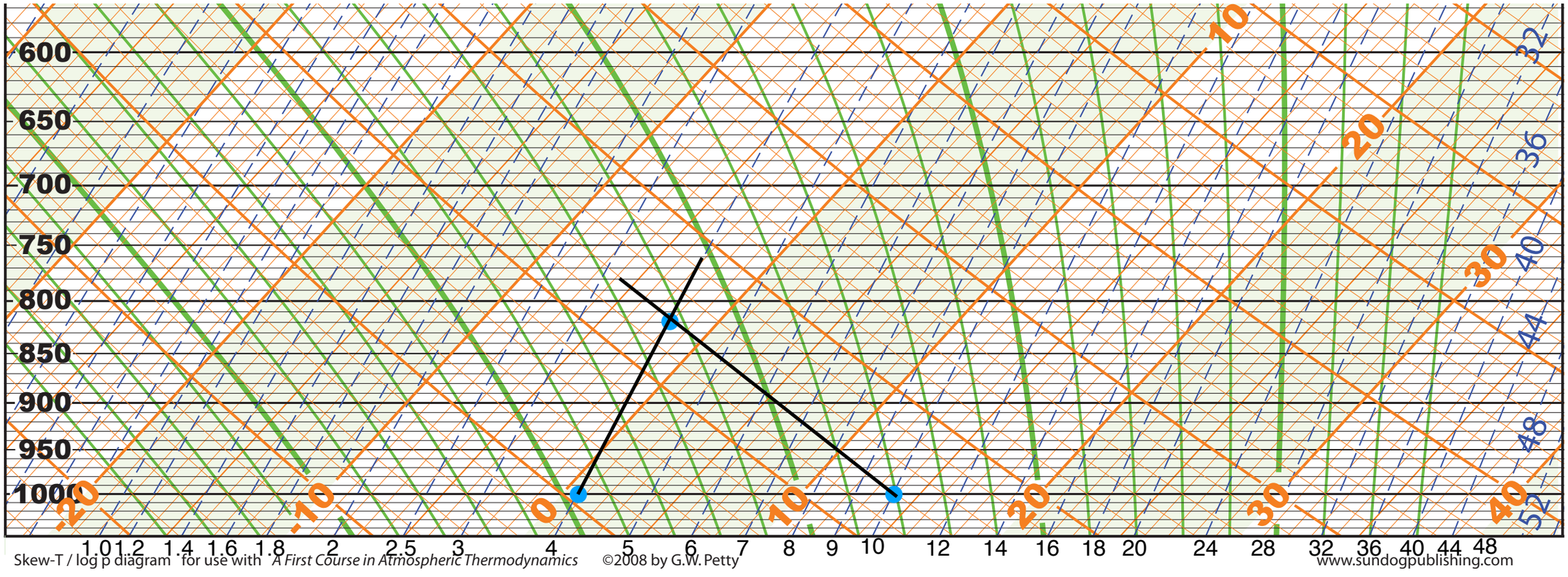
    - **e: Read it from $w_s(T_d,p)$ at p=622 mb.**
  - **What is LCL pressure (saturation pressure)?**

p =1000 mb, where T =14 C and relative humidity = 40%

Get other values at p = 850 mb



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    - **T: Read it from dry adiabat at given p.**
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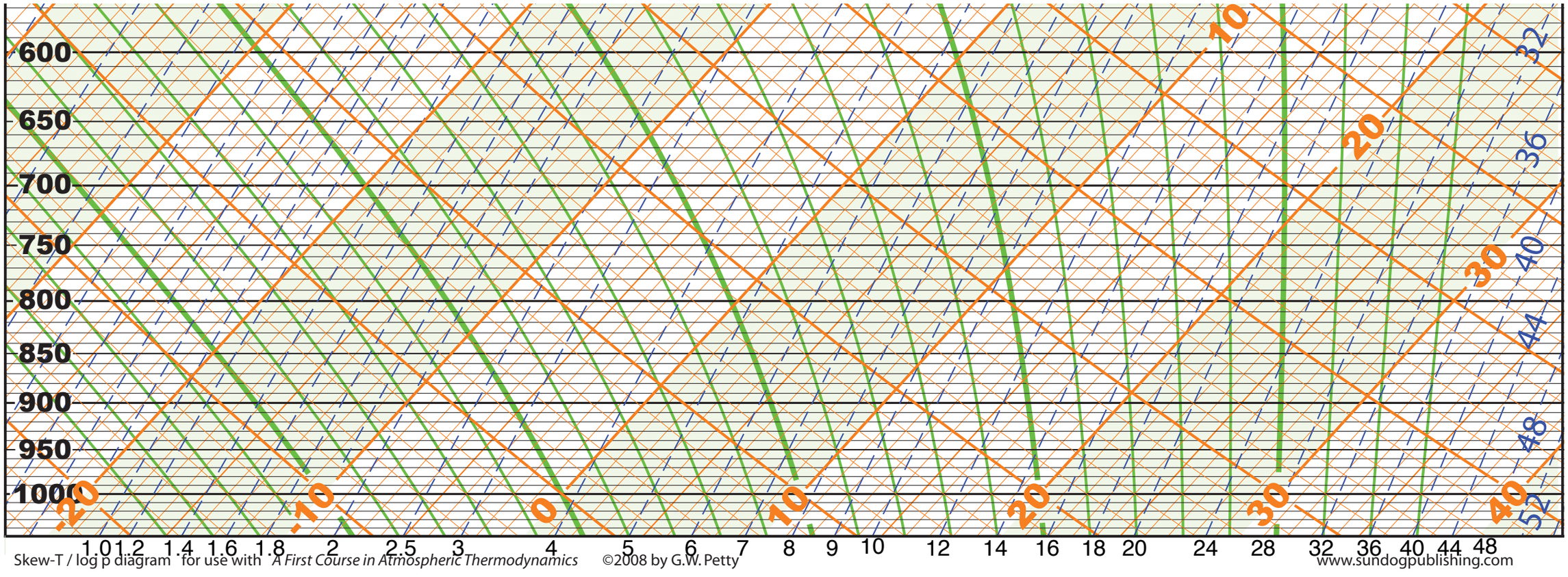

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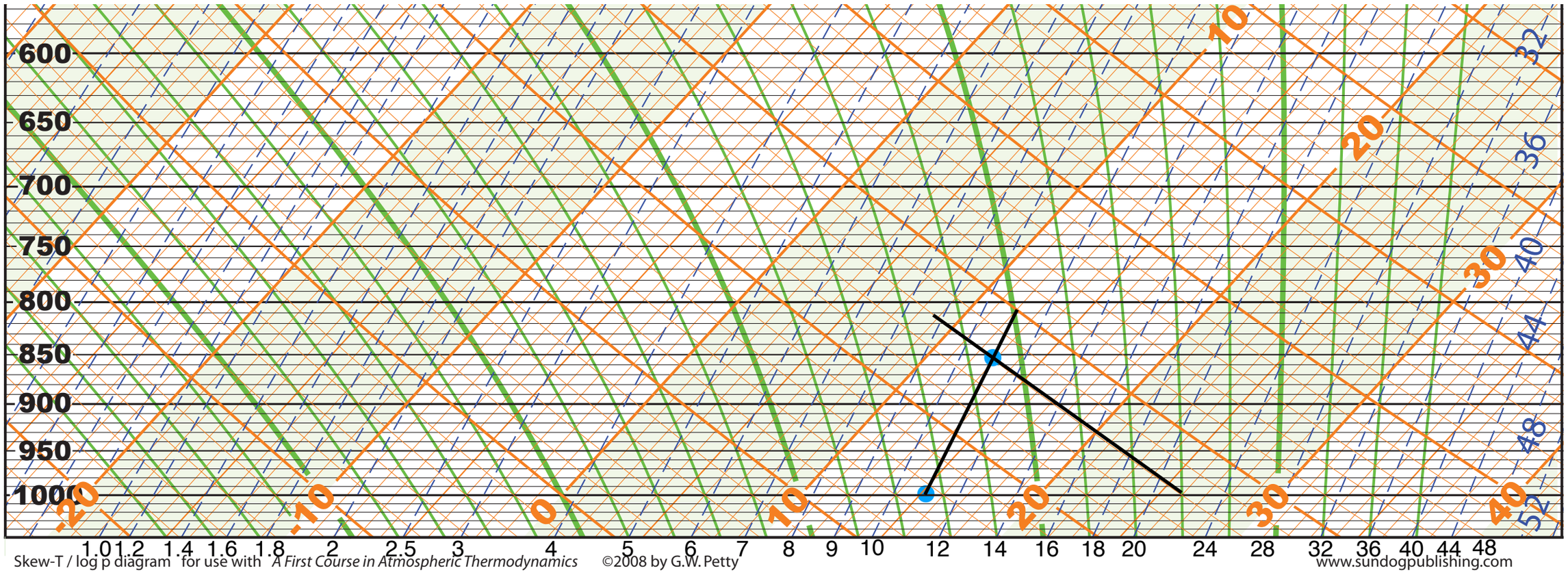

- **Given theta, w, and p at any level:** p =1000 mb, where T =26 C and relative humidity = 50%
  - **Get T, w_s, T_d, e, e_s, RH**
    - **T: Read it from dry adiabat at given p.**
    - **T_d: Read it from $w=w_s(T_d,p)$ at given p.**
    - **w_s: Read it from $w_s(T,p)$ at given p.**
    - **RH: $r = w/w_s$.**
    - **e_s: Read it from $w_s(T,p)$ at p=622 mb.**
    - **e: Read it from $w_s(T_d,p)$ at p=622 mb.**