

ATM 209
Skew-T Practice #2

Using your Skew-T, solve the following problems:

1. $T = 20^{\circ}\text{C}$, $T_d = 8^{\circ}\text{C}$ at 1000 mb.

$w = 6.8\text{ g/kg}$ $w_s = 15.0\text{ g/kg}$ $\text{RH} = 45.3\%$ $\text{LCL} = 835\text{ mb}$ $T_w = 13^{\circ}\text{C}$

2. $T = -1^{\circ}\text{C}$, $T_d = -7^{\circ}\text{C}$ at 940 mb.

$w = 2.4\text{ g/kg}$ $w_s = 3.8\text{ g/kg}$ $\text{RH} = 63.2\%$ $\text{LCL} = 855\text{ mb}$ $T_w = -3^{\circ}\text{C}$

3. $T = 13^{\circ}\text{C}$, $T_d = -4^{\circ}\text{C}$ at 800 mb.

$\text{LCL} = 615\text{ mb}$ $T_w = 4.5^{\circ}\text{C}$ $\theta = 32^{\circ}\text{C}$

4. $T = 32^{\circ}\text{C}$, $T_d = 25^{\circ}\text{C}$ at 950 mb.

$\text{LCL} = 860\text{ mb}$ $T_w = 27.5^{\circ}\text{C}$ $\theta = 36.5^{\circ}\text{C}$

5. $T = -10^{\circ}\text{C}$, $T_d = -36^{\circ}\text{C}$ at 720 mb.

$\text{LCL} = 470\text{ mb}$ $T_w = -14^{\circ}\text{C}$ $\theta = 16^{\circ}\text{C}$

6. $T = 14^{\circ}\text{C}$, $T_d = -25^{\circ}\text{C}$ at 770 mb.

$\text{LCL} = 425\text{ mb}$ $T_w = 1.5^{\circ}\text{C}$ $\theta = 36^{\circ}\text{C}$

7. $\text{LCL} = 850\text{ mb}$ for a parcel with $T = 19^{\circ}\text{C}$ at 950 mb.

$T_d = 11.5^{\circ}\text{C}$ $T_w = 14.5^{\circ}\text{C}$ $w = 9.0\text{ g/kg}$

8. $\text{LCL} = 700\text{ mb}$ for a parcel with $T_d = 0^{\circ}\text{C}$ at 900 mb.

$T = 17.0^{\circ}\text{C}$ $T_w = 8.5^{\circ}\text{C}$ $w_s = 13.8\text{ g/kg}$

9. $\theta = 6^{\circ}\text{C}$ for a parcel of air at 800 mb.

$T = -11.5^{\circ}\text{C}$ $w_s = 2.0\text{ g/kg}$