CMGT 235 – Mechanical and Electrical Systems

|  |  |
| --- | --- |
| Homework #4 | Due: 9/6 |

**Show all work for full credit.**

20 pts total

Solution

**Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use a Psychometric Chart to answer the following questions.

1. A space at sea level is 75°F and RH = 50%

Find the other properties of the air in that space.

|  |  |
| --- | --- |
| DB | 75°F |
| RH | 50% |
| WB | 62.3 °F |
| Humidity | 65 Gr/lb |
| VP | 0.43 In Hg |
| Enthalpy | 28.2 Btu/lb |
| Vs | 13.6 ft3/lb |
| Dew Point | 55.2 °F |

1. A space at sea level has a WB = 65°F and a RH = 45%

Find the other properties of the air in that space.

|  |  |
| --- | --- |
| DB | 80 °F |
| RH | 45% |
| WB | 65°F |
| Humidity | 69 Gr/lb |
| VP | 0.47 In Hg |
| Enthalpy | 30 Btu/lb |
| Vs | 13.8 ft3/lb |
| Dew Point | 55.4 °F |

Continued on back

1. A space at sea level is 25°F and RH = 30%

Find the other properties of the air in that space.

|  |  |
| --- | --- |
| DB | 25°F |
| RH | 30% |
| WB | 19 °F |
| Humidity | 6 Gr/lb |
| VP | 0.02 In Hg |
| Enthalpy | 6.9 Btu/lb |
| Vs | 12.3 ft3/lb |
| Dew Point | 0.7 °F |

100

1. Relative humidity is ­­­­­\_\_\_\_\_\_\_\_\_\_% at the saturation line.

Sensible

1. Enthalpy is the sum of latent heat and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ heat.