

## Lesson 7a, Screen 23: Seasonal Heating Degree Days

### Example 3

Given the following set of average temperatures, by month, for State College, PA, calculate the HDD for the heating season:

Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
25°F	28°F	37°F	48°F	59°F	67°F	71°F	70°F	62°F	51°F	41°F	31°F

Alright, this is an interesting problem. Given the following temperatures by month for State College, we need to calculate the heating degree days for the entire season. For January, the outside temperature is 25°F. This is average temperature for 31 days in January. And February, the outside temperature is 28°F, March, 37°F and April it is 48°F and May, the temperature outside is 59°F. June, the outside temperature is 67°F, July, the outside temperature is 71°F and August it is 70°F. September, it goes on like that. September it is 62°F, and October it is 51°F, November, 41°F and December goes as 31°F.

What we need to do is basically subtract this number (25°F) from 65 so the difference is, 65 minus 25, so this is 40°F for the month of January.

$$(65^\circ - 25^\circ = 40^\circ \text{ F}).$$

The same case here (February). 65 minus 28 which happens to be 37°F.

$$(65^\circ - 28^\circ = 37^\circ \text{ F}).$$

And if we do the same for all these months, from March through December, and then we have to multiply each month temperature difference by the number of days in the month.

So, for example, in the case of January, there are 31 days. So when you multiply 40° by 31 days you get 1240 degree days.

$$(40^\circ \times 31 \text{ days} = 1240 \text{ degree days}).$$

Similarly, we can do for all these months and add up and it turns out that for the entire year, it is 6138 degree days for State College.

J F M A M J J A  
25°F 28°F 37°F 48°F 59°F 67°F 71°F 76°F  
65°-25° 65°-48°  
(40°F) S O NOV D  
 $\frac{X 31 \text{ days}}{1260 \text{ days}}$   
6138 deg days

Click PLAY to view the solution.



REPLAY

