

Operational Weather Analysis Exercise

Objective Analysis Exercise Answer

| Site | I-Coord | J-Coord | Temp | del-i | del-j | s | wt func | h(I,j) | h*wt |
|------|---------|---------|------|-------|-------|----------|------------|----------|----------|
| A | 0.2 | 4.7 | 60 | -3.8 | 2.2 | 4.3909 | 0 | 0 | 0 |
| B | 0.7 | 0.7 | 70 | -3.3 | -1.8 | 3.758989 | 0 | 0 | 0 |
| C | 1.2 | 2.6 | 67 | -2.8 | 0.1 | 2.801785 | 0.00038975 | 0.00036 | 0.024122 |
| D | 2.1 | 5.8 | 63 | -1.9 | 3.3 | 3.807887 | 0 | 0 | 0 |
| E | 2.5 | 4.1 | 66 | -1.5 | 1.6 | 2.193171 | 0.00814786 | 0.007526 | 0.496742 |
| F | 3.5 | 3.5 | 68 | -0.5 | 1 | 1.118034 | 0.2865048 | 0.264652 | 17.99634 |
| G | 3.2 | 1.7 | 71 | -0.8 | -0.8 | 1.131371 | 0.2780373 | 0.25683 | 18.23496 |
| H | 4.5 | 5.5 | 69 | 0.5 | 3 | 3.041381 | 0 | 0 | 0 |
| I | 4.8 | 2.3 | 71 | 0.8 | -0.2 | 0.824621 | 0.50661699 | 0.467976 | 33.22626 |
| J | 5.6 | 0.5 | 75 | 1.6 | -2 | 2.56125 | 0.00141589 | 0.001308 | 0.098092 |
| K | 6.2 | 3.8 | 72 | 2.2 | 1.3 | 2.555386 | 0.00145901 | 0.001348 | 0.097036 |
| L | 7.5 | 5.5 | 70 | 3.5 | 3 | 4.609772 | 0 | 0 | 0 |
| M | 7.7 | 1.8 | 75 | 3.7 | -0.7 | 3.765634 | 0 | 0 | 0 |
| N | 8.5 | 3.5 | 73 | 4.5 | 1 | 4.609772 | 0 | 0 | 0 |
| Sum | | | | | | | 1.08257159 | | 70.17355 |

Answer: 70.2 degrees Fahrenheit

Weight function = $\exp[(-s*s)]$

Radius of influence = 3 grid squares

Plot of METAR locations on next page

Observation Locations

