

*Task sets from monthly meteorological bulletins
from the Polish Polar Station Hornsund*

Using a website hornsund.igf.edu.pl/weather/ download the meteorological bulletin from the Polish Polar Station from the selected month (example: [report 2017 08.pdf](#), where the first number is year 2017 and the second is a month – August).

Task 1. Calculate the difference between the maximum value of the air temperature in a selected month and the minimum value of **air temperature** recorded in this month in the multi-annual period.

Task 2. From the figure *Average daily wind speed and maximum wind gust*, calculate the number of days with average **wind speed** exceeding 5 m/s.

Task 3. Calculate the number of days with recorded **wind gusts** above 10 m/s and 15 m/s.

Task 4. Using the table *Daily values of selected meteorological parameters* compare the air temperature in given and previous month (download the previous month's bulletin). Write down the mean / minimum / maximum monthly air temperature (columns 2 - 4) and calculate the differences.

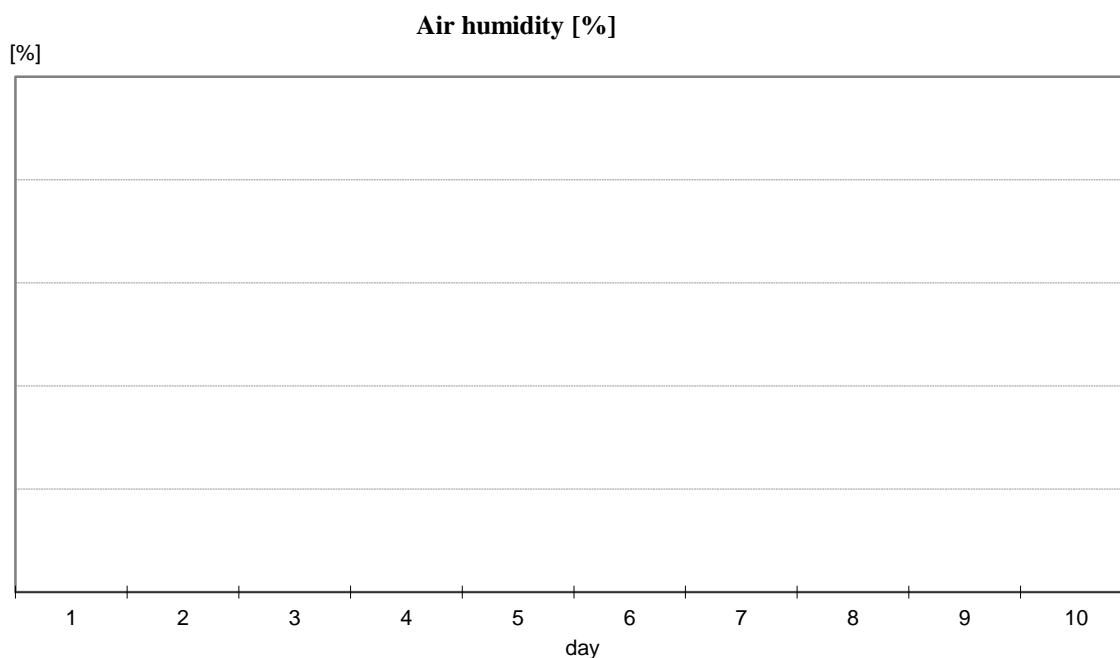
Air temperature	Mean	Minimum	Maximum
Previous month <input type="text"/>			
Given month <input type="text"/>			
Difference			

Task 5. The actinometrical measurements (solar radiation) planned by scientists can only be carried out during days with total sunshine exceeding 3 hours. During how many days measurements were done in this month? This **cannot be calculated** in winter months during polar night (which in Hornsund lasts between 31st October and 12th February) and for bulletins older than June 2011.

Task 6. Compare the air temperature in a selected month and the same month in previous year (download the previous year's bulletin from a given month). Write down the mean / minimum / maximum monthly air temperature and calculate the differences.

Air temperature	Mean	Minimum	Maximum
Month / Year <input type="text"/>			
Month / Year <input type="text"/>			
Difference			

Task 7. Using data from the table *Daily values of selected meteorological parameters* draw a graph of the change of air humidity in the first decade of the month.



Task 8. Compare the sum of precipitation in the first half of a given month to the same period in the previous year. Calculate how much these sums varie.

Precipitation	Sum of precipitation in days 1 - 15
Month / Year <input type="text"/>	
Month / Year <input type="text"/>	
Difference	

Task 9. Calculate the relative change (percentage of increase or decrease) of the monthly sum of precipitation compared to the same month in the previous year.

Precipitation	Sum
Month / Year <input type="text"/>	
Month / Year <input type="text"/>	
%	

Task 10. Calculate the relative change (percentage of increase or decrease) of the monthly sum of precipitation compared to the same month in the previous multi-annual average.

Precipitation	Sum
Month / Year <input type="text"/>	
Multi-annual <input type="text"/>	
%	

Task 11. Assuming that a rain jacket is necessary when the precipitation (liquid or solid) >2 mm calculate and write down the number of days in a month when it was necessary to wear it.

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Task 12. Basing on the Figure of *the daily mean air pressure* and the table *Daily values of selected meteorological parameters* write down 5 days with the highest and 5 with the lowest values of atmospheric pressure.

Max. atmospheric pressure					
Min. atmospheric pressure					

Task 13. Using the table *Daily values of selected meteorological parameters* calculate the mean cloudiness for the first two decades of the month.

1 – 10	11 - 20

Task 14. Calculate the difference between the total sunshine in given month and multi-annual average of total sunshine in this month.

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Task 15. From the wind rose calculate relative difference (in %) of wind direction E and the occurrence of calm.

Wind	%
From East direction (E)	
Calm	
Difference	

Task 16. Specify which days of the month have the lowest and the highest minimal air temperature near the ground. Write down the values.

	Day	Temperature near the ground
Lowest min. near the ground		
Highest min. near the ground		

Task 17. Calculate the median of the maximum daily air temperatures.

Task 18. Assume that snowfall occurred only when the mean daily air temperature was $<0^{\circ}\text{C}$. Calculate during how many days snowfall occurred and the amount of solid precipitation.

Number of days with snowfall	Sum of solid precipitation

Task 19. Assume that liquid precipitation (rainfall and drizzle) occurred only when the mean daily air temperature was $\geq 0^{\circ}\text{C}$. Calculate during how many days liquid precipitation and the amount of liquid precipitation.

Number of days with liquid precipitation	Sum of liquid precipitation

Task 20. Calculate the amplitude between the maximum and minimum air temperature, mean daily atmospheric pressure, mean daily humidity and mean daily cloudiness.

	Minimum	Maximum	Amplitude
Air temperature			
Atmospheric pressure			
Air humidity			
Cloudiness			