**Hunter College of the City University of New York**
**Department of Geography**
**Geography of New York State**
**Exercise 7 REQUIRED**

# Climates of New York State

Due by October 22, 2012; late submission will be penalized.

*The purpose of this exercise is to understand how the principles of weather and climate, when applied to NYS, create a unique environment. You will construct a climograph for a weather station located within each of your counties to visually portray its temperature and precipitation data. When viewing average numbers, the stations may seem similar statistically. However, there are differences caused by physical location. You will relate the temperature, precipitation and snowfall data to climate controls found in each county, as latitude, altitude, predominant wind flow, proximity to large bodies of water, and the movement of the daily weather makers. Read* **Climate of New York** *summary in the handout or at* [http://cdo.ncdc.noaa.gov/climatenormals/clim60/states/Clim_NY_01.pdf](http://cdo.ncdc.noaa.gov/climatenormals/clim60/states/Clim_NY_01.pdf)

**ASSIGNMENT: There are <u>THREE PARTS</u> to this exercise.**

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**PART I**
**Locate, highlight in yellow and label each of your three assigned counties on the** *Weather Stations* **map on page 3.**

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**PART II**
**1. Select <u>one</u> weather station from <u>each county</u> and <u>circle</u> it on the map.**
　　a. To identify the weather station, see pages 4-7 of the Monthly Station Climate Summaries for New York at [http://cdo.ncdc.noaa.gov/climatenormals/clim20/state-pdf/ny.pdf](http://cdo.ncdc.noaa.gov/climatenormals/clim20/state-pdf/ny.pdf). Write down the station names so you can retrieve the statistical data needed below. **(DO NOT PRINT THIS FILE. IT IS 442 pages LONG.)** *If your county does not have weather station, select the nearest weather station from an adjoining county or state, preferably a weather station within the same physiographic (landform) region.*
　　b. Go to [http://cdo.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl](http://cdo.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl) to get data. Click on **Monthly Station Climate Summaries (CLIM20)** to get to the state summaries. Then scroll to **NEW YORK** and click on **CONTINUE** it to bring up the alphabetical list of weather stations. Select your stations; you can also select stations from adjoining states by clicking on that state's name. *NOTE: Each station summary is 6 pages long. You need just the temperature and precipitation chart and information on snowfall.*

**2. Complete the blanks for each climograph** (see pages 4-6 of this exercise) **for the weather stations selected in Step 1.** Consult your NYS map, the physiographic regions map for the landform region, and the temperature and precipitation charts.

**3. Using the monthly statistics from the temperature and precipitation charts, construct a climograph for each station.** (See your GEOG 101 textbook for an example.) Use the **"MEAN"** column for temperature and precipitation statistics.

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**NOTE:** As an alternative to hand-drawing the climographs, construct them using an **Excel spread sheet**.

1) In box A3 type "Month", in B3 type "Precipitation in inches" and in C3 type "Temperature in °F".
2) In boxes A4 through A15 enter the months: Jan, Feb, Mar, Apr, etc.
3) In boxes B4 through B15 enter the monthly mean precipitation figures in inches.
4) In boxes C4 through C15 enter the monthly mean temperature figures in °F.
5) **Highlight** the grid space from **A3 to C15**.
6) Under **INSERT**, click **CHART** which activates the Chart Wizard.
7) Follow instructions for a **"Line Column on 2 Axes"** combination chart.
8) Remember to give each chart a title (name of weather station used).
9) Change the scale of the precipitation axis to make the bars shorter; set the maximum value
 at 6 inches unless your weather receives more than that amount in any month .

**PART III**
**Write a comparison of the climate conditions found at the three weather stations by incorporating climate controls to explain differences.** What is the correlation between each weather station's temperature and precipitation statistics, and its physical location in NYS? Remember, a station may be warmer or wetter than one at the same latitude depending on its location in relation to climate controls. Relate the data to the site's physical characteristics. Be sure to discuss snowfall at each weather station. Note that while the statistics may be similar a slight difference can result in significant climate variation. Review the climate controls discussed in class and consult
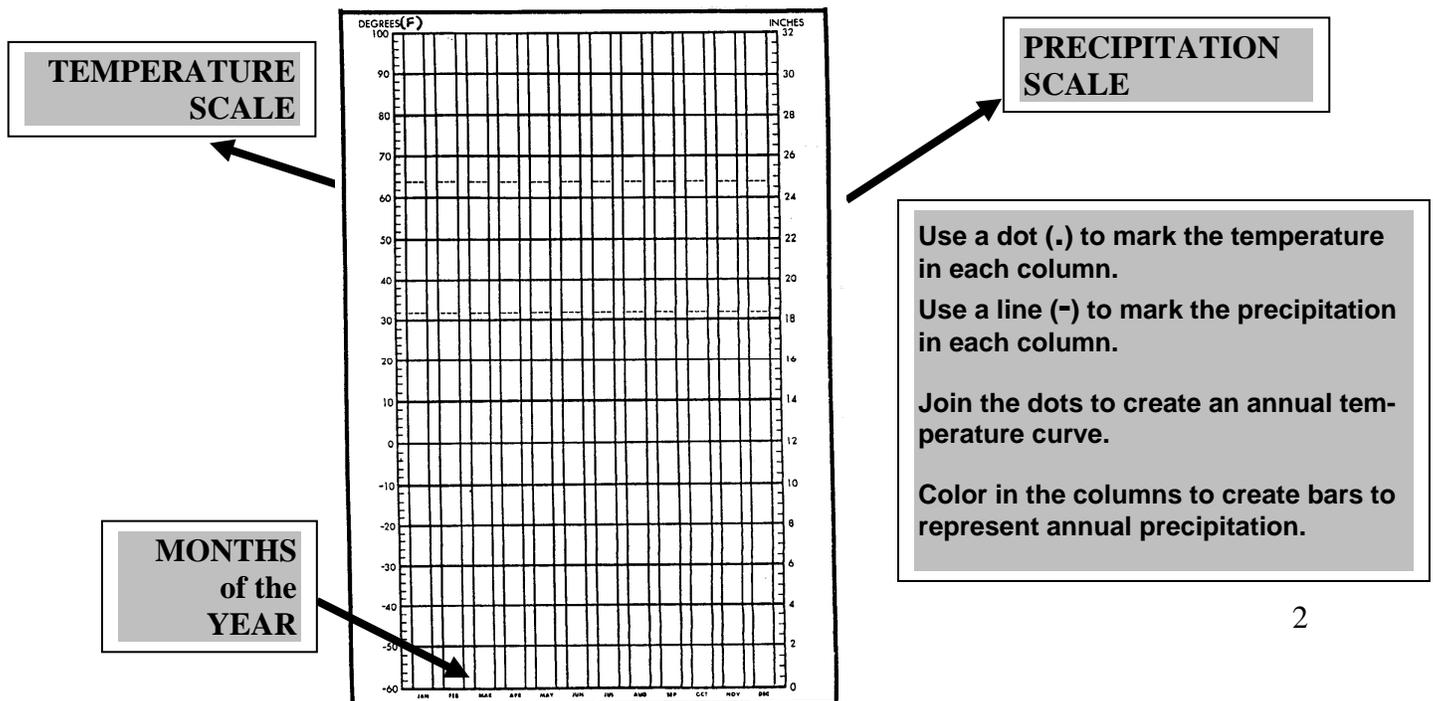*http://cdo.ncdc.noaa.gov/climatenormals/clim60/states/Clim_NY_01.pdf*.

## Climograph Key

The bottom axis is the **Months of the Year.** At the base of each column you will find the monthly abbreviations: Jan-Feb-Mar-Apr-May-Jun-Jul-Aug-Sep-Oct-Nov-Dec.

The left axis is the **Temperature Scale** in °F. The scale ranges from -60°F to +100°F. *(Note the location of the 32°F -freezing point- dashed line.)* To record monthly mean temperature for January, using the temperature scale, place a **DOT** in the January column. Repeat for each month. Then connect the dots to create an annual temperature curve.

The right axis is the **Precipitation Scale** in inches. The scale ranges from 0 inches to 32 inches. To record monthly mean precipitation for January, using the precipitation scale, draw a **LINE** across the January column. Shade in the column from zero to measurement recorded to create a precipitation bar. Repeat for each month of the year.



**TEMPERATURE SCALE**

**PRECIPITATION SCALE**

**MONTHS of the YEAR**

**Use a dot (.) to mark the temperature in each column.**

**Use a line (-) to mark the precipitation in each column.**

**Join the dots to create an annual temperature curve.**

**Color in the columns to create bars to represent annual precipitation.**

## PART I.
   a) **Label and highlight** your three counties in yellow.
   b) **CIRCLE** the location of the three weather stations on the map. *(For counties without a weather station, use the closest one within the same landform region.)*

### New York Station Locations
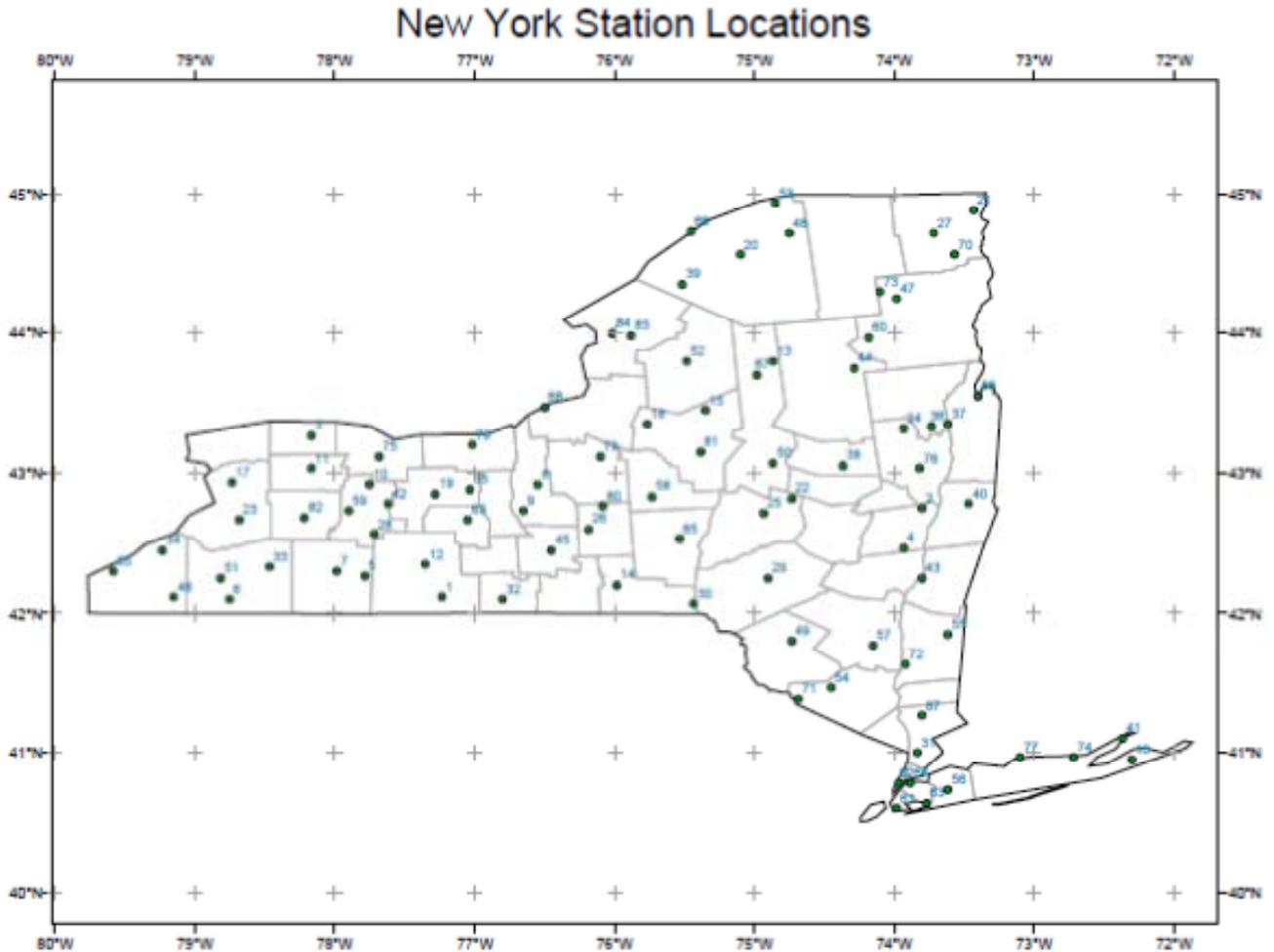


Map from **Monthly Station Climate Summaries, 1971-2000 for New York, US Dept of Commerce, NOAA.**
**For a clearer copy of the map go to:**
**http://cdo.ncdc.noaa.gov/climatenormals/clim20/state-pdf/ny.pdf**

## REMEMBER TO ATTACH MAP TO THE CLIMOGRAPHS!

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# PART II
# CLIMOGRAPH 1

County:                                                            _____
Name of weather station:                                           _____
Landform region of weather station:                               _____
Latitude of weather station:                                      _____
Elevation of weather station:                                     _____
Warmest month/mean monthly temp in °F:         _____/_____
Coldest month/mean monthly temp in °F:         _____/_____
Range of mean temperature (highest-lowest):    _____
Wettest month/mean monthly precipitation in inches:_____/_____
Driest month/mean monthly precipitation in inches: _____/_____
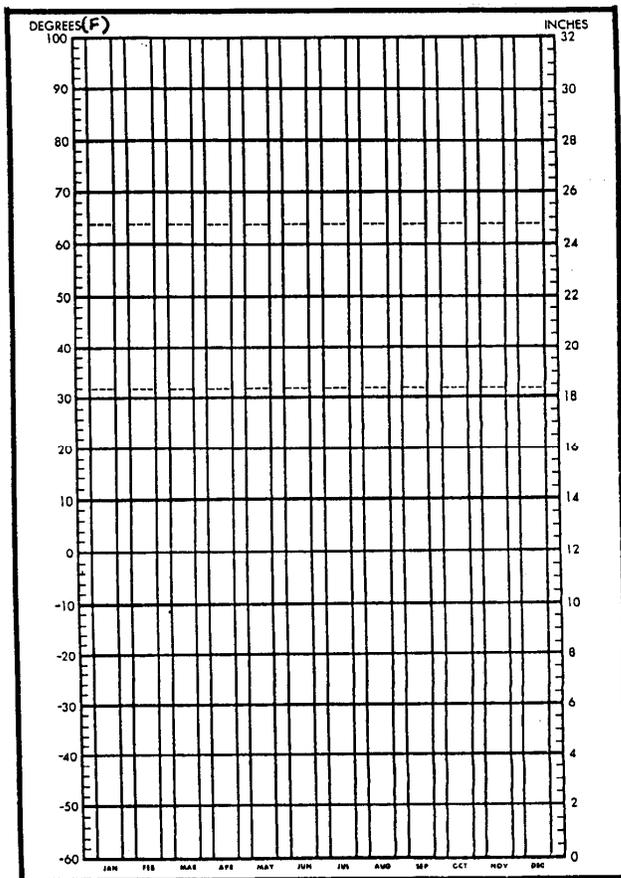Total mean annual precipitation in inches:                        _____
Annual snowfall in inches:                                        _____
Two snowiest months of the year:               _____/_____
Amount received in each those months:          _____/_____
Climate region of weather station *(from climate
map in handout)*                                                  _____

## CLIMOGRAPH 2

County:                                                                  _____
Name of weather station:                                     _____
Landform region of weather station:                  _____
Latitude of weather station:                                _____
Elevation of weather station:                             _____
Warmest month/mean monthly temp in °F:        _____/_____
Coldest month/mean monthly temp in °F:          _____/_____
Range of mean temperature (highest-lowest):    _____
Wettest month/mean monthly precipitation in inches:_____/_____
Driest month/mean monthly precipitation in inches: _____/_____
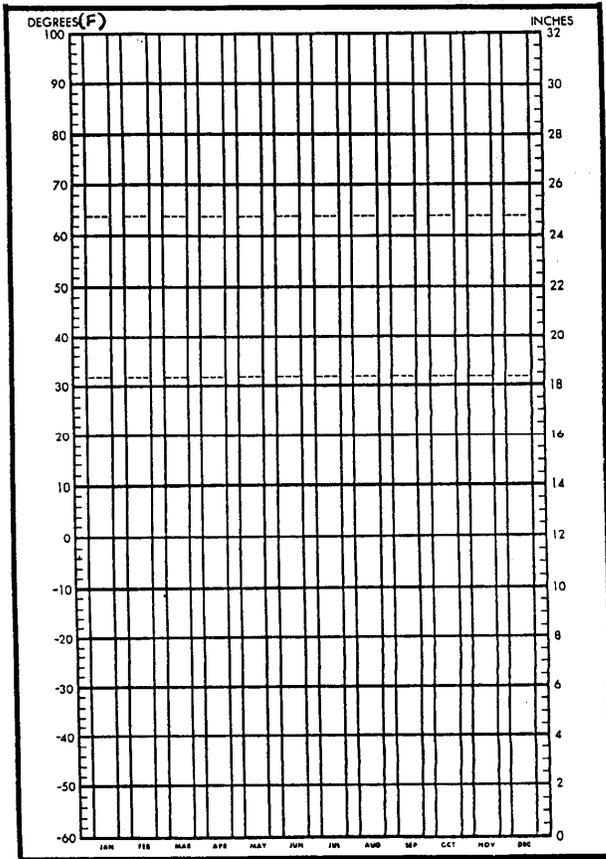Total mean annual precipitation in inches:         _____
Annual snowfall in inches:                                  _____
Two snowiest months of the year:                       _____/_____
Amount received in each those months:             _____/_____
Climate region of weather station *(from climate
map in handout)*                                                 _____

## CLIMOGRAPH 3

County: _____

Name of weather station: _____

Landform region of weather station: _____

Latitude of weather station: _____

Elevation of weather station: _____

Warmest month/mean monthly temp in °F: _____/_____

Coldest month/mean monthly temp in °F: _____/_____

Range of mean temperature (highest-lowest): _____

Wettest month/mean monthly precipitation in inches:_____/_____

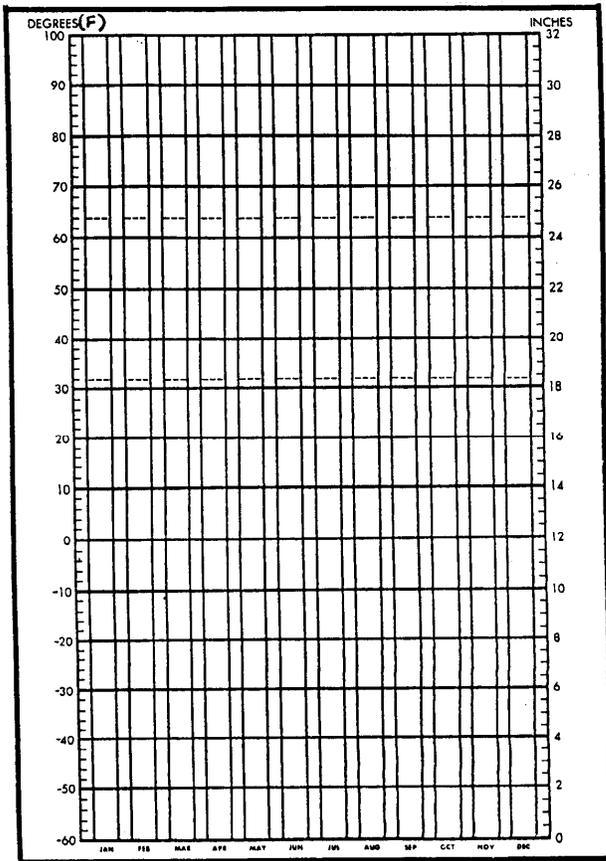Driest month/mean monthly precipitation in inches: _____/_____

Total mean annual precipitation in inches: _____

Annual snowfall in inches: _____

Two snowiest months of the year: _____/_____

Amount received in each those months: _____/_____

Climate region of weather station *(from climate map in handout)* _____

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