Toronto_60410_2018_Day1to7.csv 2
Toronto_60410_2018_Day2to8.csv 3
Toronto_60410_2018_Day3to9.csv 4
Toronto_60410_2018_Day4to10.csv 5
Toronto_60410_2018_Day5to11.csv 6
Toronto_60410_2018_Day6to12.csv 7
Toronto_60410_2018_Day7to13.csv 8
Toronto_60410_2018_Day8to14.csv 9
Toronto_60410_2018_Day9to15.csv 10
Toronto_60410_2018_Day10to16.csv 11
Toronto_60410_2018_Day11to17.csv 12
Toronto_60410_2018_Day12to18.csv 13
Toronto_60410_2018_Day13to19.csv 14
Toronto_60410_2018_Day14to20.csv 15
Toronto_60410_2018_Day15to21.csv 16
Toronto_60410_2018_Day200to206.csv 17
Toronto_60410_2018_Day201to207.csv 18
Toronto_60410_2018_Day202to208.csv 19
Toronto_60410_2018_Day203to209.csv 20
Toronto_60410_2018_Day204to210.csv 21
Toronto_60410_2018_Day205to211.csv 22
Toronto_60410_2018_Day206to212.csv 23
Toronto_60410_2018_Day207to213.csv 24
Toronto_60410_2018_Day208to214.csv 25
Toronto_60410_2018_Day209to215.csv 26
Toronto_60410_2018_Day210to216.csv 27
Toronto_60410_2018_Day211to217.csv 28
Toronto_60410_2018_Day212to218.csv 29
Toronto_60410_2018_Day213to219.csv 30
Toronto_60410_2018_Day214to220.csv 31

Toronto_60410_2018_Day1to7.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day1to7.csv dataset used in CHM 135 Experiment 1.

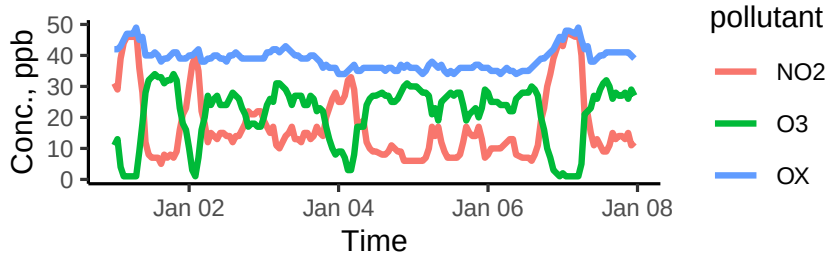

Figure 1: Time series of pollutant concentration.

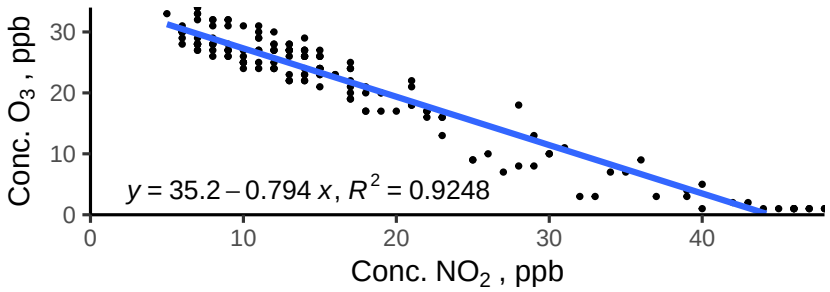

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	17.5	11.2	14	5	48
O3	21.4	9.2	24	1	34
OX	38.8	3.4	39	34	49

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **32.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day2to8.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day2to8.csv dataset used in CHM 135 Experiment 1.

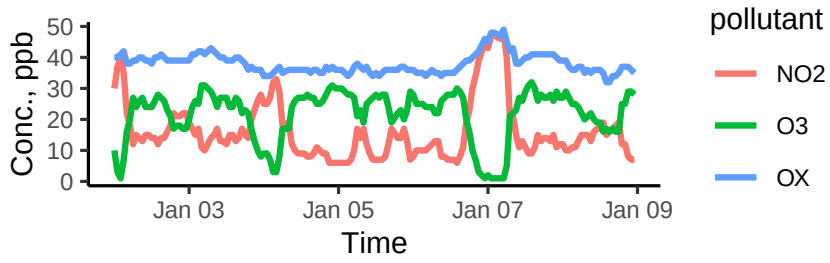

Figure 1: Time series of pollutant concentration.

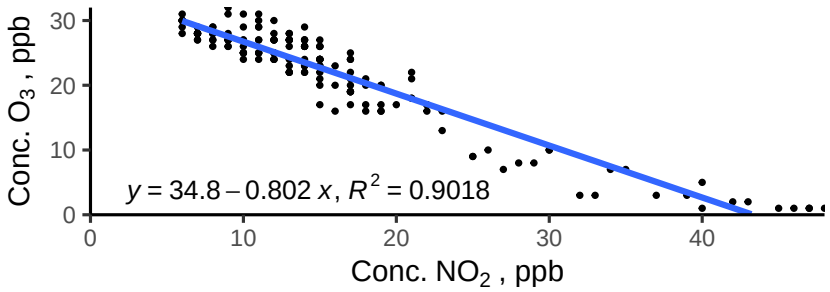

Figure 2: Correlation plot of O3 vs. NO2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	16.1	9.4	14	6	48
O3	21.8	8.0	25	1	32
OX	37.9	3.1	37	32	49

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O3 concentration that includes the highest concentration of O3 identified in question 12 is **28.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day3to9.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day3to9.csv dataset used in CHM 135 Experiment 1.

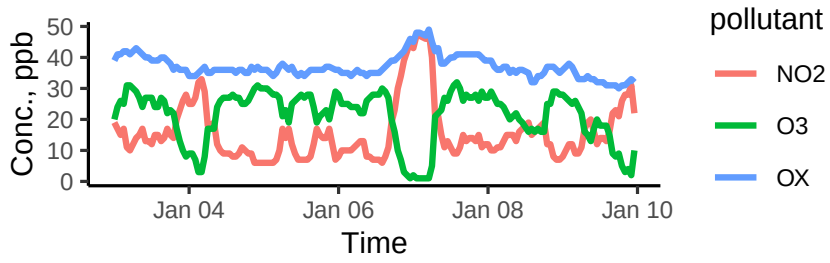

Figure 1: Time series of pollutant concentration.

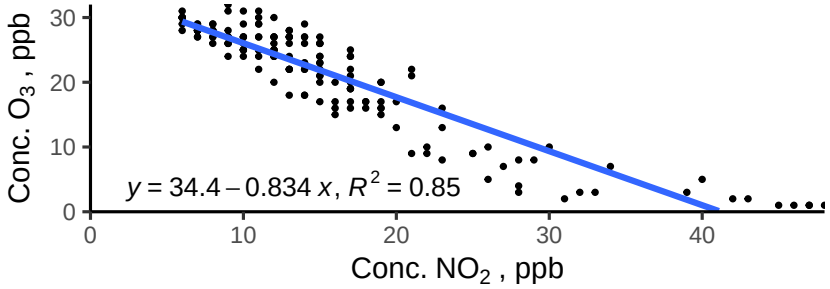

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	15.7	9.2	13	6	48
O3	21.3	8.3	24	1	32
OX	37.0	3.6	36	30	49

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **28.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day4to10.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day4to10.csv dataset used in CHM 135 Experiment 1.

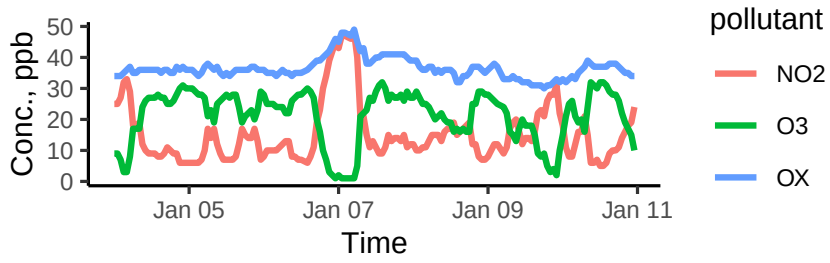

Figure 1: Time series of pollutant concentration.

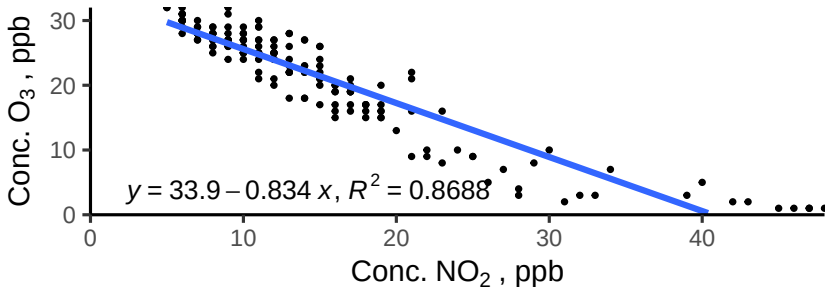

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	15.2	9.3	13	5	48
O3	21.2	8.3	24	1	32
OX	36.5	3.4	36	30	49

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **28.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day5to11.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day5to11.csv dataset used in CHM 135 Experiment 1.

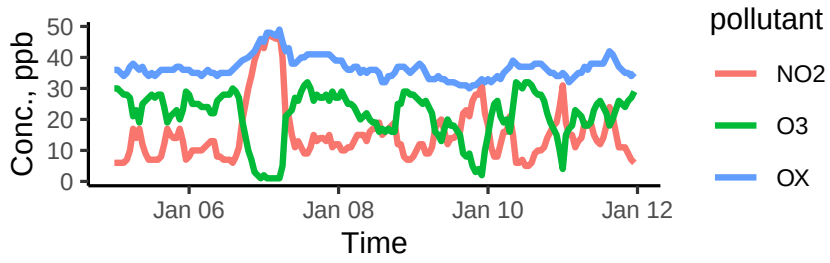

Figure 1: Time series of pollutant concentration.

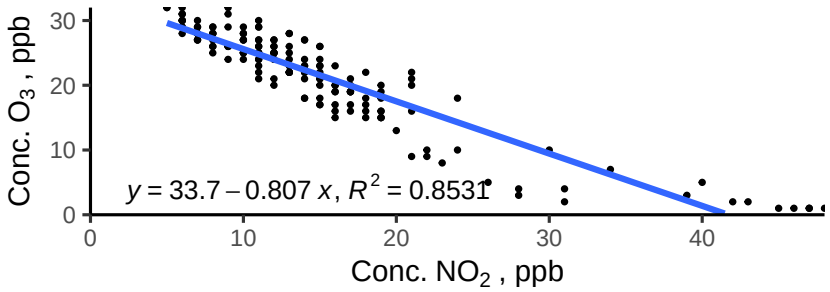

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	15.2	8.9	13	5	48
O3	21.4	7.8	24	1	32
OX	36.6	3.5	36	30	49

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **28.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day6to12.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day6to12.csv dataset used in CHM 135 Experiment 1.

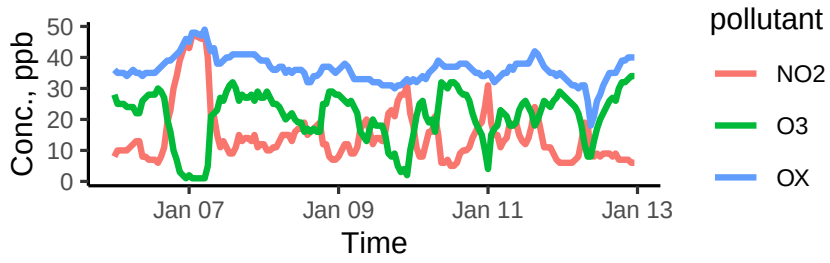

Figure 1: Time series of pollutant concentration.

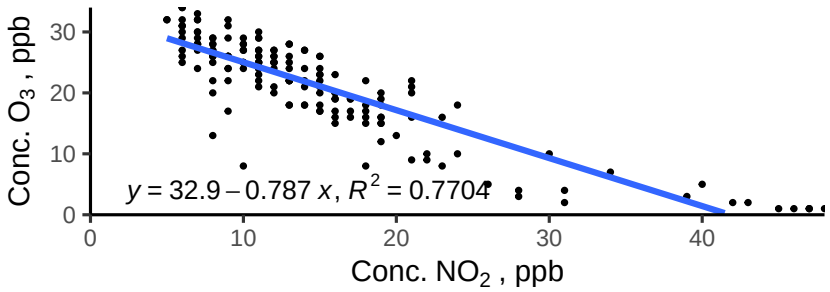

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	14.9	9.1	13	5	48
O3	21.2	8.1	23	1	34
OX	36.1	4.3	36	18	49

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **31.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day7to13.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day7to13.csv dataset used in CHM 135 Experiment 1.

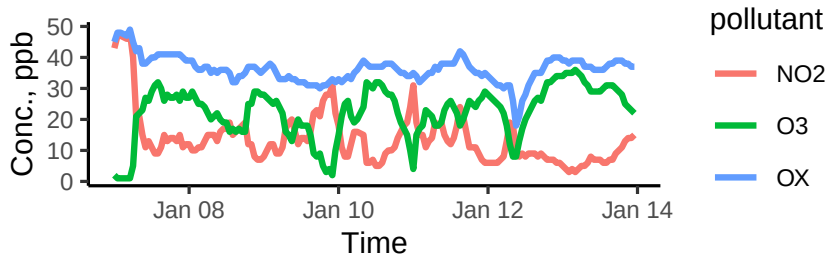

Figure 1: Time series of pollutant concentration.

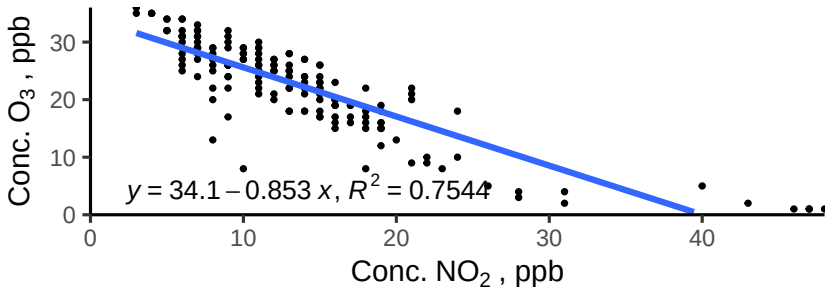

Figure 2: Correlation plot of O3 vs. NO2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	13.6	8.3	12	3	48
O3	22.5	8.2	24	1	36
OX	36.1	4.2	36	18	49

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O3 concentration that includes the highest concentration of O3 identified in question 12 is **34.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day8to14.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day8to14.csv dataset used in CHM 135 Experiment 1.

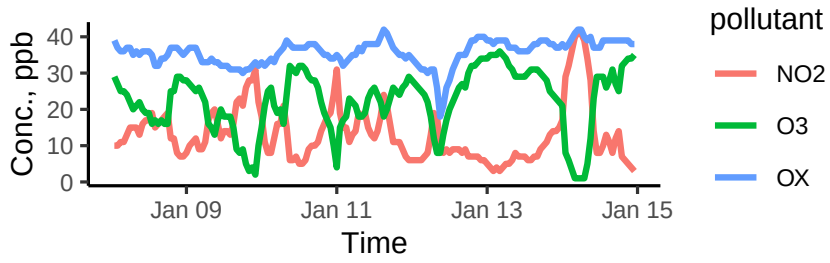

Figure 1: Time series of pollutant concentration.

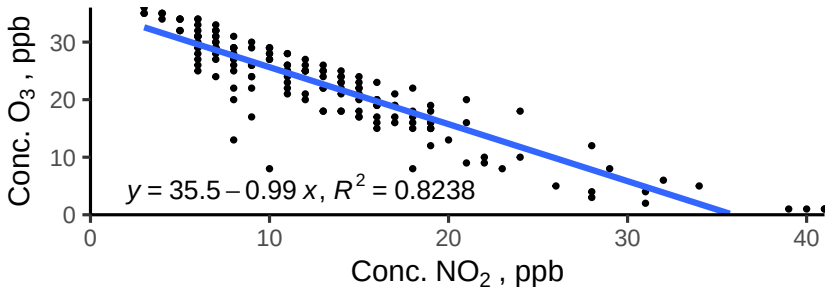

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	13.2	7.7	11	3	41
O3	22.5	8.4	24	1	36
OX	35.7	3.5	36	18	42

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **34.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day9to15.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day9to15.csv dataset used in CHM 135 Experiment 1.

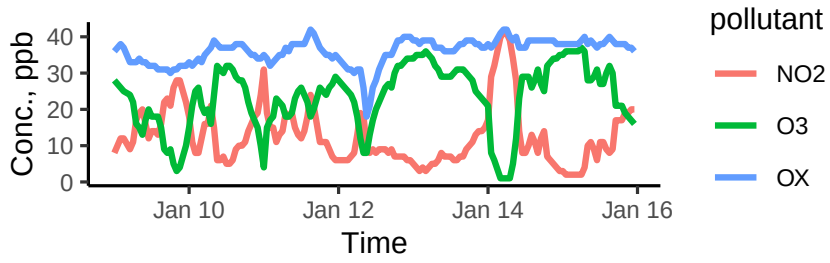

Figure 1: Time series of pollutant concentration.

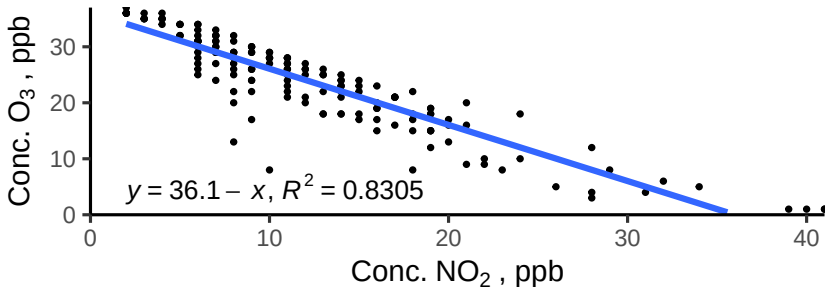

Figure 2: Correlation plot of O3 vs. NO2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	12.5	7.9	11	2	41
O3	23.5	8.7	25	1	37
OX	36.1	3.6	37	18	42

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O3 concentration that includes the highest concentration of O3 identified in question 12 is **36.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day1oto16.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day1oto16.csv dataset used in CHM 135 Experiment 1.

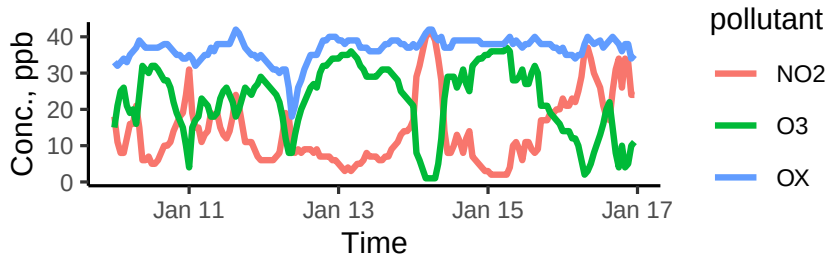

Figure 1: Time series of pollutant concentration.

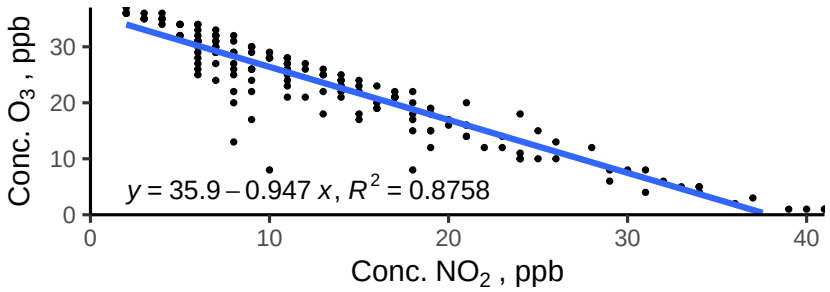

Figure 2: Correlation plot of O3 vs. NO2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	14.0	9.3	11	2	41
O3	22.7	9.4	24	1	37
OX	36.6	3.3	38	18	42

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O3 concentration that includes the highest concentration of O3 identified in question 12 is **36.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day11to17.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day11to17.csv dataset used in CHM 135 Experiment 1.

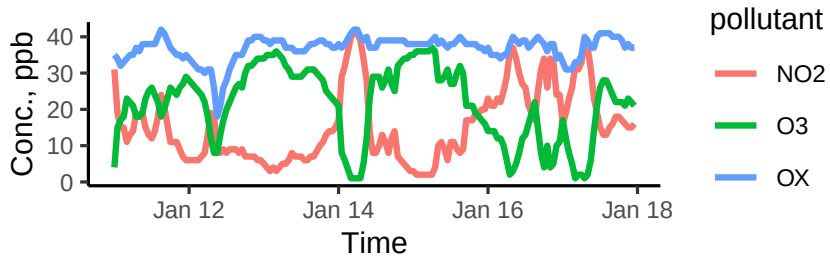

Figure 1: Time series of pollutant concentration.

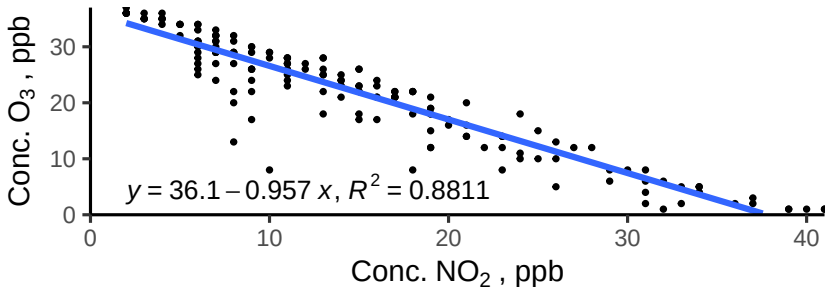

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	15.4	9.9	13	2	41
O3	21.4	10.1	23	1	37
OX	36.8	3.5	38	18	42

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **36.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day12to18.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day12to18.csv dataset used in CHM 135 Experiment 1.

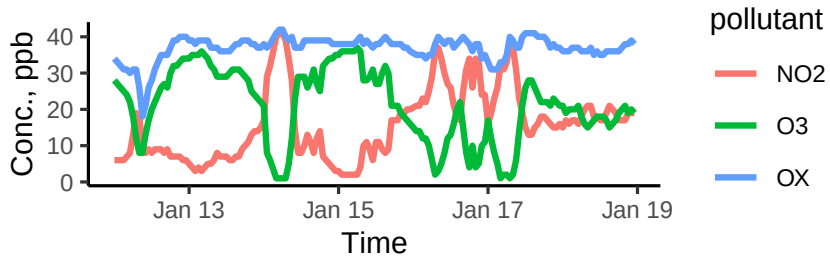

Figure 1: Time series of pollutant concentration.

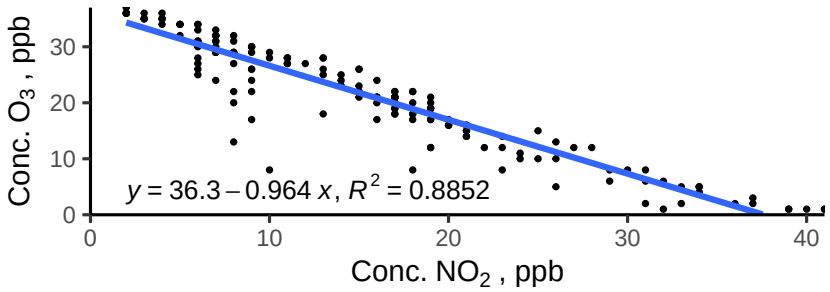

Figure 2: Correlation plot of O3 vs. NO2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	15.8	9.7	15	2	41
O3	21.0	10.0	21	1	37
OX	36.8	3.4	38	18	42

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O3 concentration that includes the highest concentration of O3 identified in question 12 is **36.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day13to19.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day13to19.csv dataset used in CHM 135 Experiment 1.

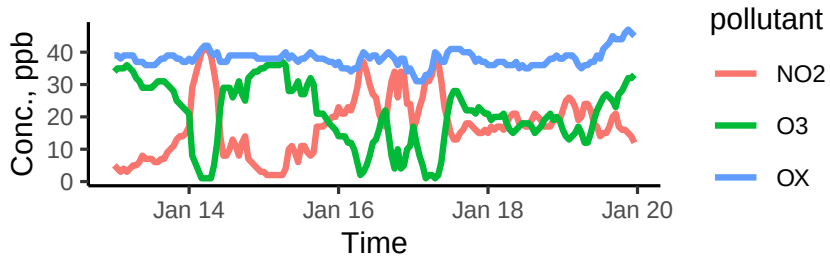

Figure 1: Time series of pollutant concentration.

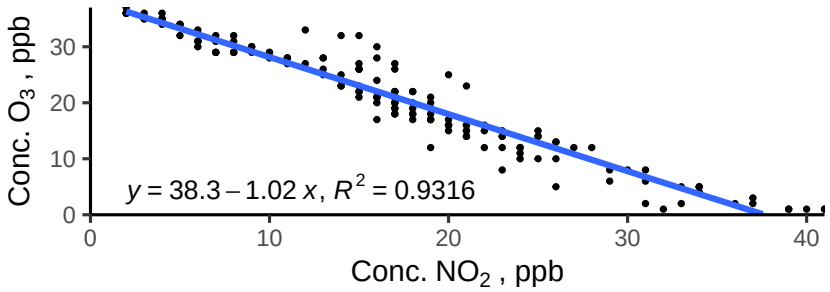

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	17.2	9.3	17	2	41
O3	20.8	9.8	21	1	37
OX	38.0	2.6	38	31	47

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **36.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day14to20.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day14to20.csv dataset used in CHM 135 Experiment 1.

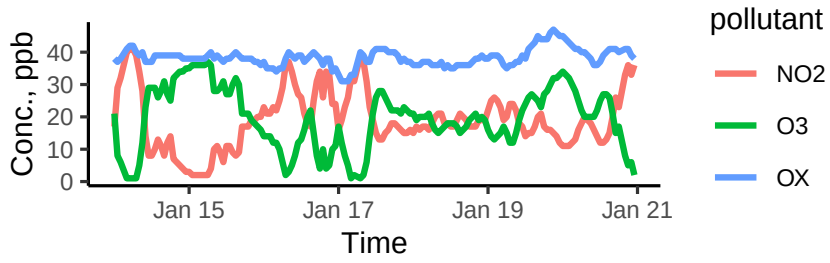

Figure 1: Time series of pollutant concentration.

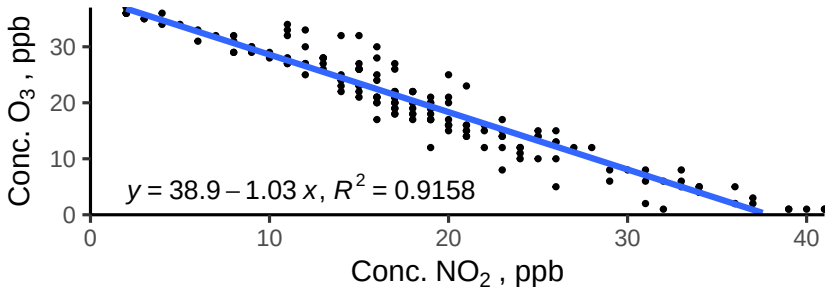

Figure 2: Correlation plot of O3 vs. NO2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	18.8	8.8	18	2	41
O3	19.5	9.4	20	1	37
OX	38.4	2.7	38	31	47

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O3 concentration that includes the highest concentration of O3 identified in question 12 is **36.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day15to21.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day15to21.csv dataset used in CHM 135 Experiment 1.

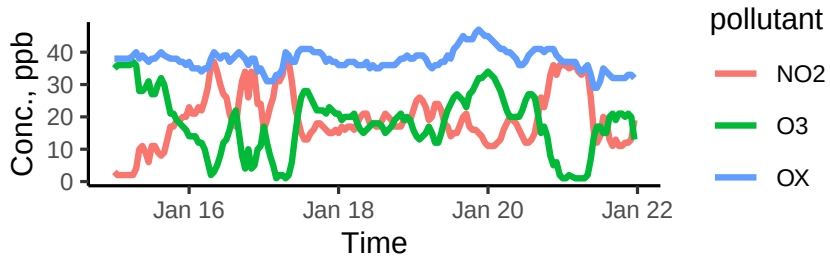

Figure 1: Time series of pollutant concentration.

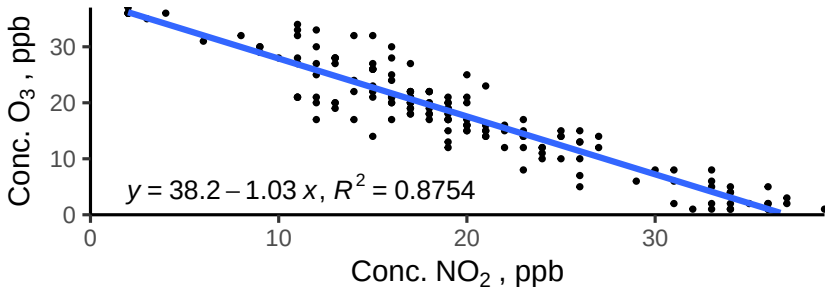

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	19.5	8.4	18	2	39
O3	18.1	9.2	19	1	37
OX	37.6	3.3	38	29	47

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **36.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day200to206.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day200to206.csv dataset used in CHM 135 Experiment 1.

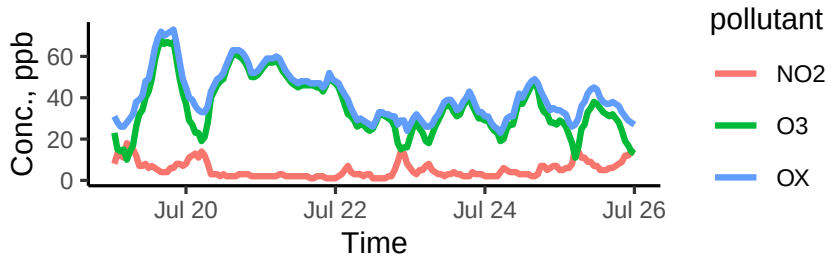

Figure 1: Time series of pollutant concentration.

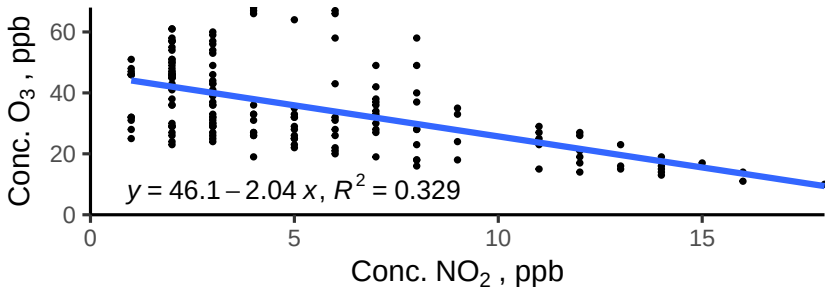

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	5.2	3.9	4	1	18
O3	35.5	13.7	32	10	68
OX	40.7	11.9	38	23	73

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **64.25 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day201to207.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day201to207.csv dataset used in CHM 135 Experiment 1.

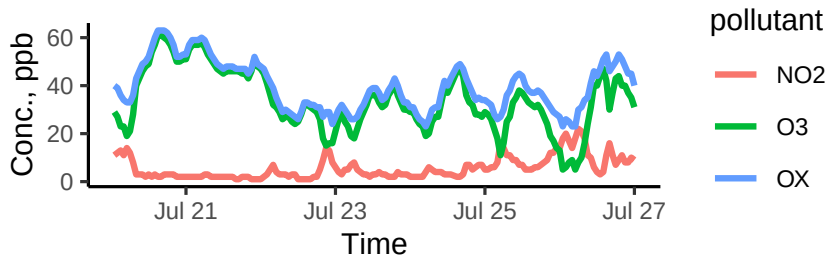

Figure 1: Time series of pollutant concentration.

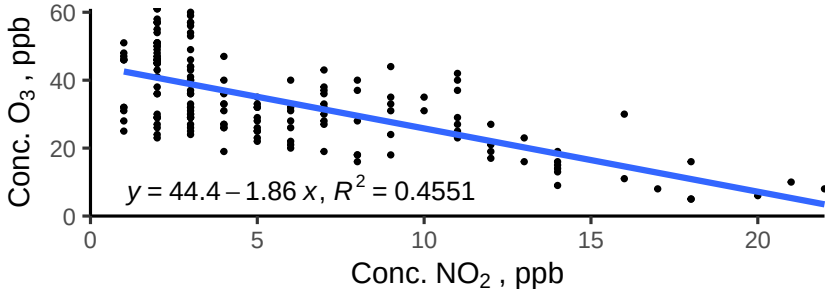

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	5.7	4.7	4	1	22
O3	33.9	12.9	32	5	61
OX	39.5	10.4	38	23	63

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **57.88 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day202to208.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day202to208.csv dataset used in CHM 135 Experiment 1.

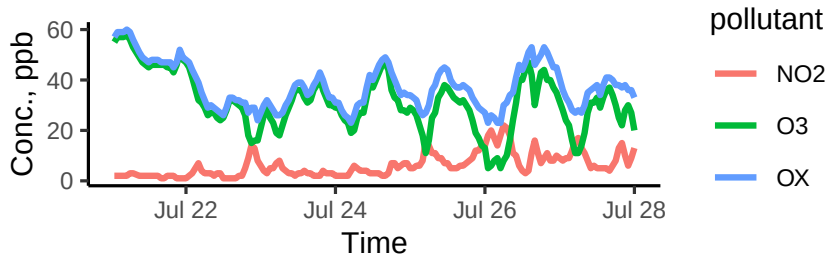

Figure 1: Time series of pollutant concentration.

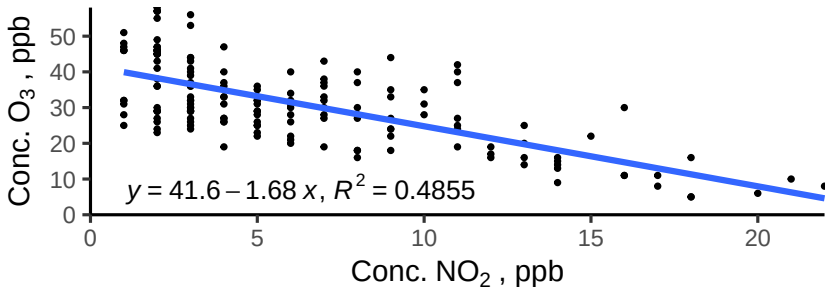

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	6.2	4.8	5	1	22
O3	31.1	11.5	30	5	58
OX	37.3	8.9	36	23	60

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **55.25 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day203to209.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day203to209.csv dataset used in CHM 135 Experiment 1.

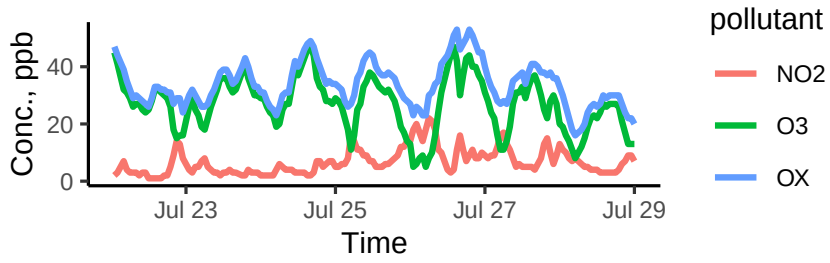

Figure 1: Time series of pollutant concentration.

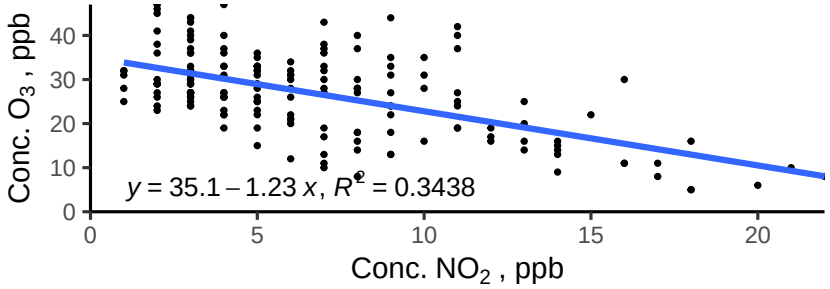

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	6.8	4.5	6	1	22
O3	26.7	9.5	27	5	47
OX	33.5	7.7	33	16	53

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **41.50 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day204to210.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day204to210.csv dataset used in CHM 135 Experiment 1.

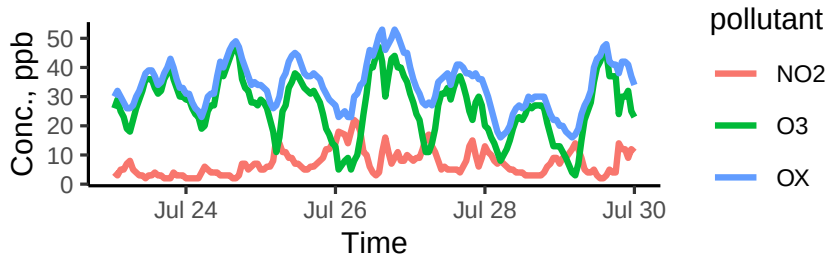

Figure 1: Time series of pollutant concentration.

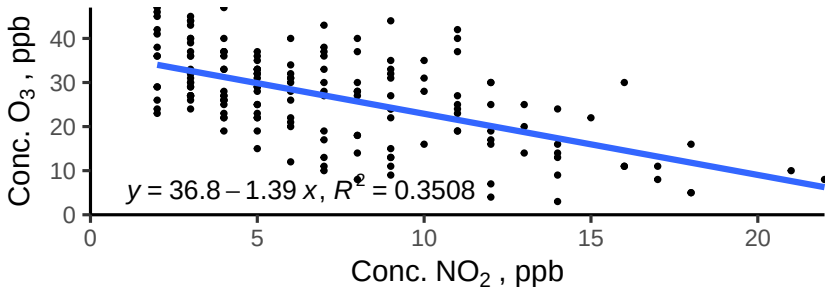

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	7.2	4.3	6	2	22
O3	26.8	10.2	27	3	47
OX	34.0	8.4	34	16	53

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **41.50 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day205to211.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day205to211.csv dataset used in CHM 135 Experiment 1.

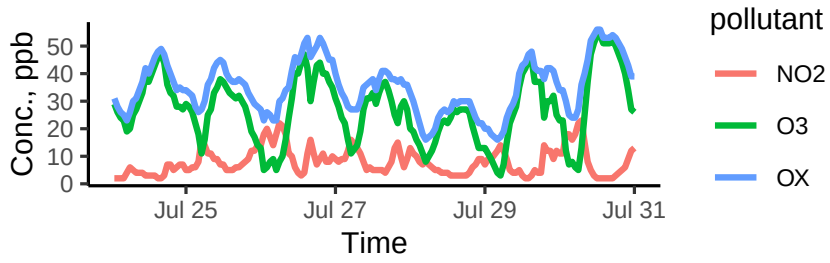

Figure 1: Time series of pollutant concentration.

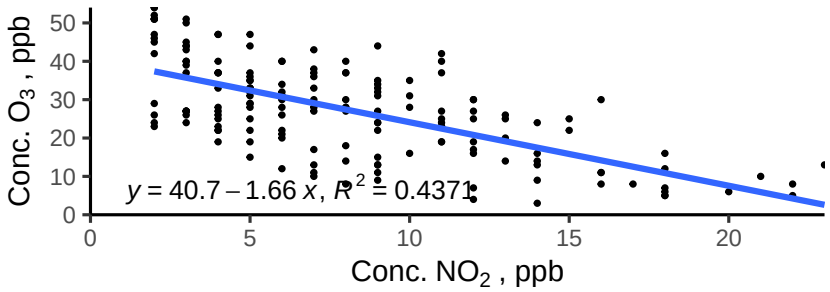

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	8.1	4.9	7	2	23
O3	27.3	12.3	27	3	54
OX	35.4	9.7	36	16	56

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **51.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day206to212.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day206to212.csv dataset used in CHM 135 Experiment 1.

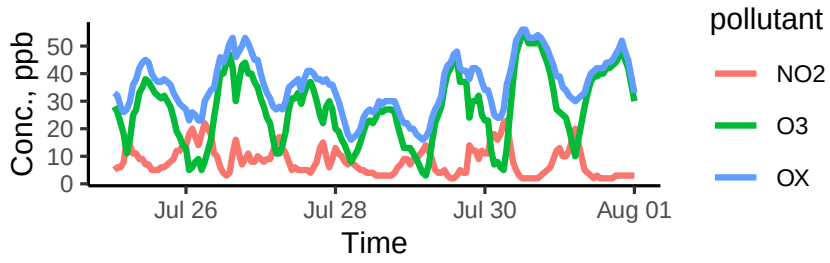

Figure 1: Time series of pollutant concentration.

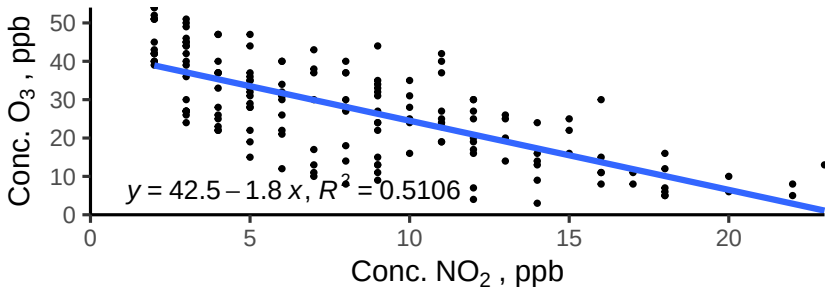

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	8.3	5.0	7	2	23
O3	27.6	12.7	27	3	54
OX	35.9	9.7	36	16	56

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **51.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day207to213.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day207to213.csv dataset used in CHM 135 Experiment 1.

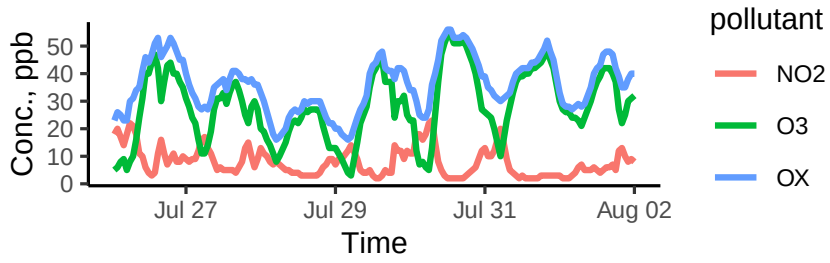

Figure 1: Time series of pollutant concentration.

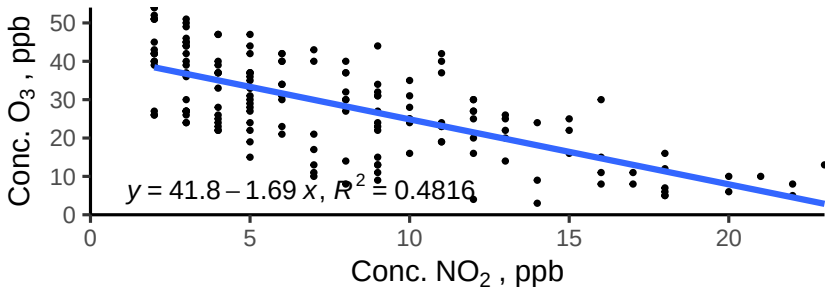

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	7.9	5.1	7	2	23
O3	28.4	12.5	27	3	54
OX	36.3	9.7	36	16	56

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **51.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day208to214.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day208to214.csv dataset used in CHM 135 Experiment 1.

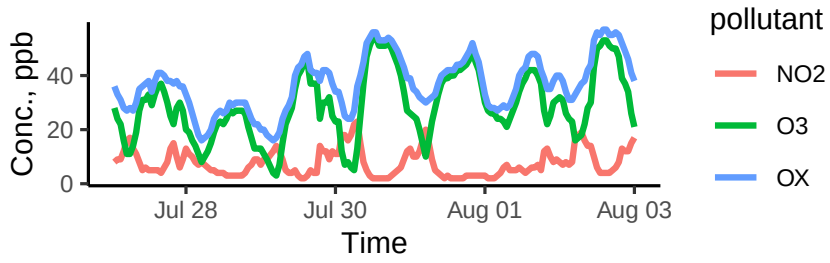

Figure 1: Time series of pollutant concentration.

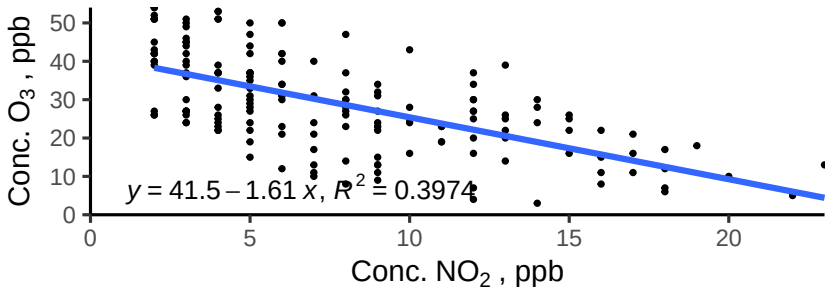

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	7.7	4.9	6	2	23
O3	29.1	12.5	27	3	54
OX	36.8	10.1	37	16	57

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **51.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day209to215.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day209to215.csv dataset used in CHM 135 Experiment 1.

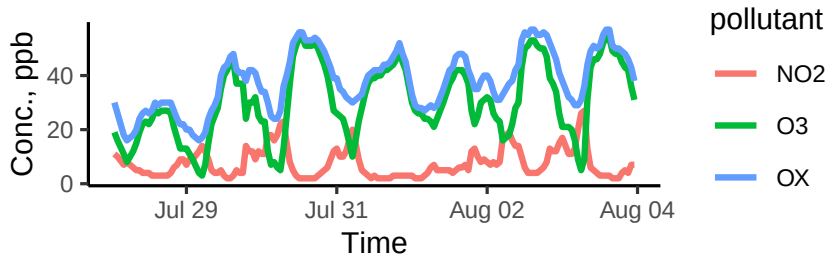

Figure 1: Time series of pollutant concentration.

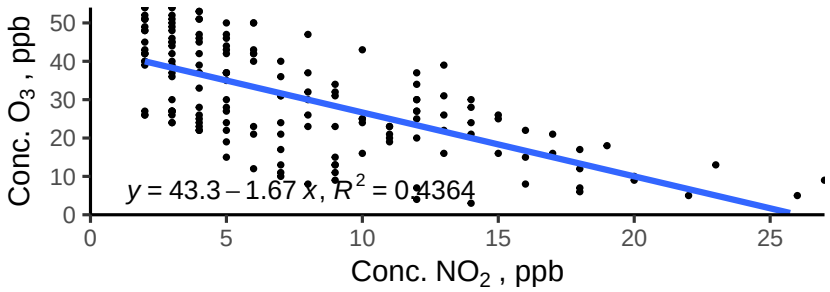

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	7.6	5.4	6	2	27
O3	30.6	13.6	29	3	54
OX	38.2	10.8	38	16	57

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **51.75 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day210to216.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day210to216.csv dataset used in CHM 135 Experiment 1.

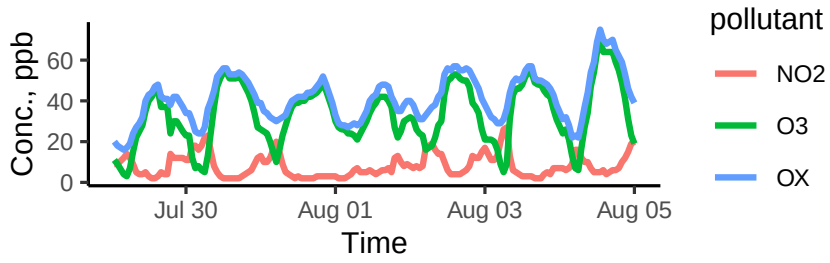

Figure 1: Time series of pollutant concentration.

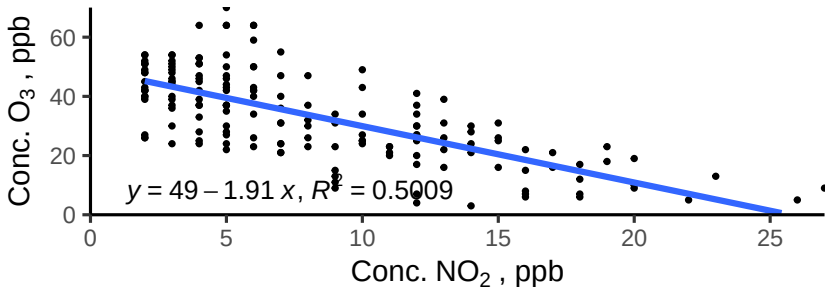

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	8.2	5.6	6	2	27
O3	33.5	15.0	34	3	70
OX	41.6	11.7	42	16	75

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **63.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day211to217.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day211to217.csv dataset used in CHM 135 Experiment 1.

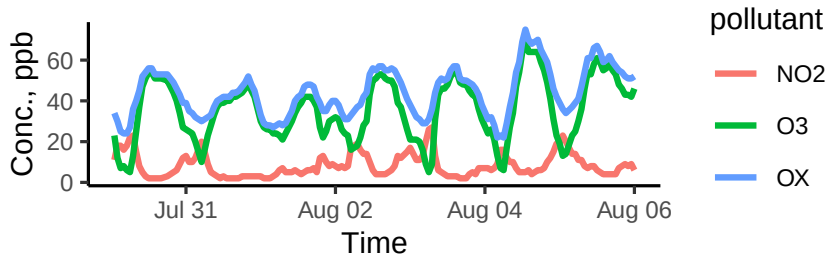

Figure 1: Time series of pollutant concentration.

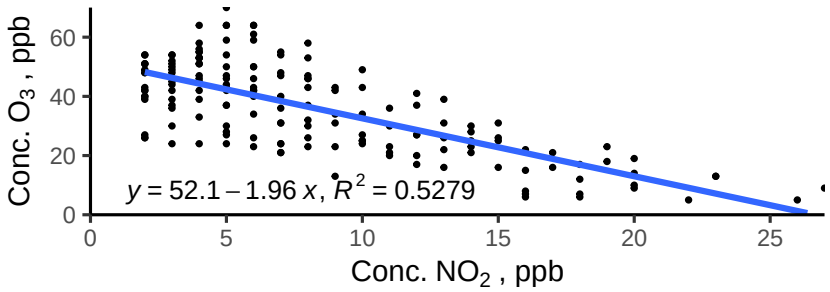

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	8.3	5.6	7	2	27
O3	35.9	15.2	37	5	70
OX	44.2	11.8	44	22	75

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **63.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day212to218.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day212to218.csv dataset used in CHM 135 Experiment 1.

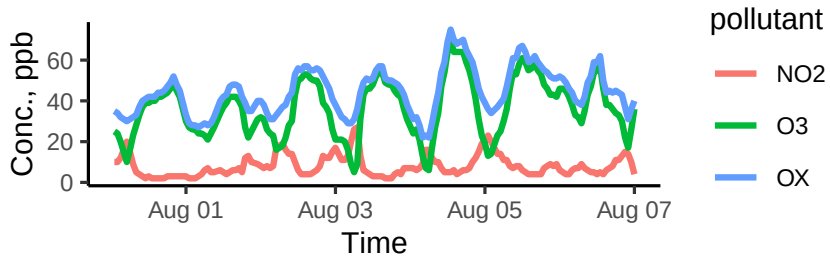

Figure 1: Time series of pollutant concentration.

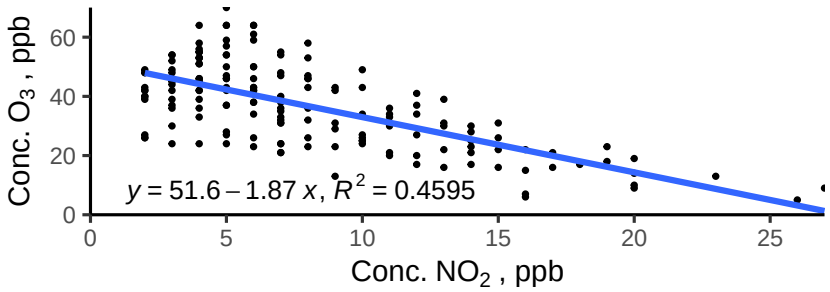

Figure 2: Correlation plot of O3 vs. NO2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	8.0	5.2	7	2	27
O3	36.6	14.2	37	5	70
OX	44.7	11.3	44	22	75

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O3 concentration that includes the highest concentration of O3 identified in question 12 is **63.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day213to219.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day213to219.csv dataset used in CHM 135 Experiment 1.

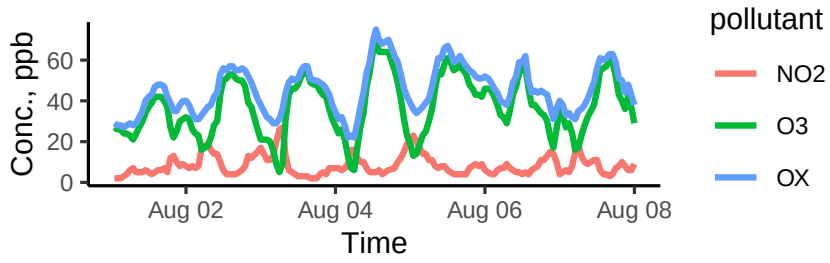

Figure 1: Time series of pollutant concentration.

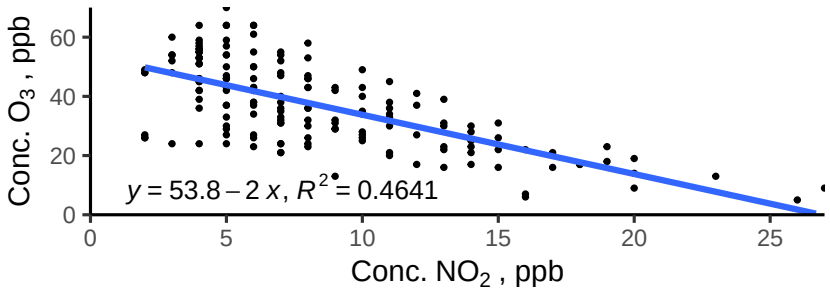

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	8.4	4.9	7	2	27
O3	37.1	14.3	37	5	70
OX	45.4	11.6	44	22	75

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **62.38 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60410_2018_Day214to220.csv

The results below are what the student results should look like for the Toronto_60410_2018_Day214to220.csv dataset used in CHM 135 Experiment 1.

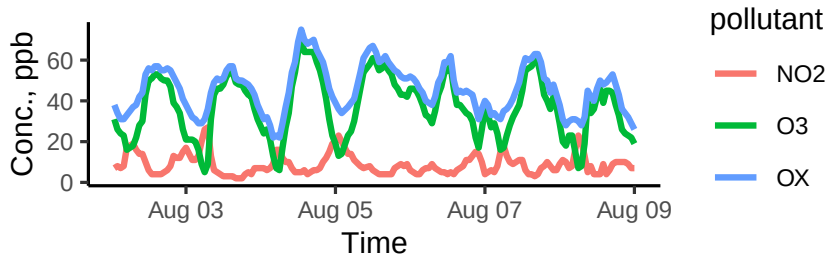

Figure 1: Time series of pollutant concentration.

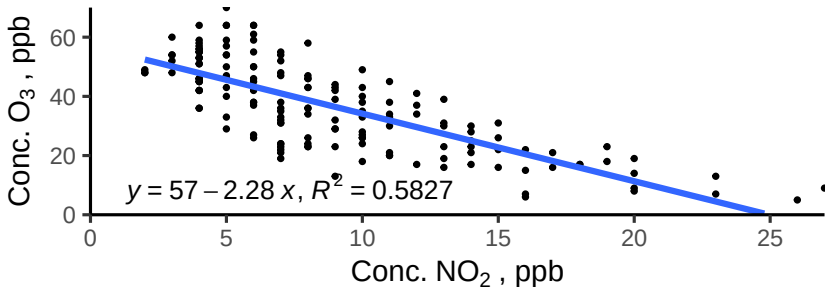

Figure 2: Correlation plot of O_3 vs. NO_2; the equation of the line is dislayed in the lower left corner.

pollutant	mean	sd	median	min	max
NO2	8.8	5.0	7	2	27
O3	36.8	15.0	38	5	70
OX	45.7	11.6	45	22	75

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Question 13: The highest 8-hour mean O_3 concentration that includes the highest concentration of O_3 identified in question 12 is **63.00 ppb**.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.