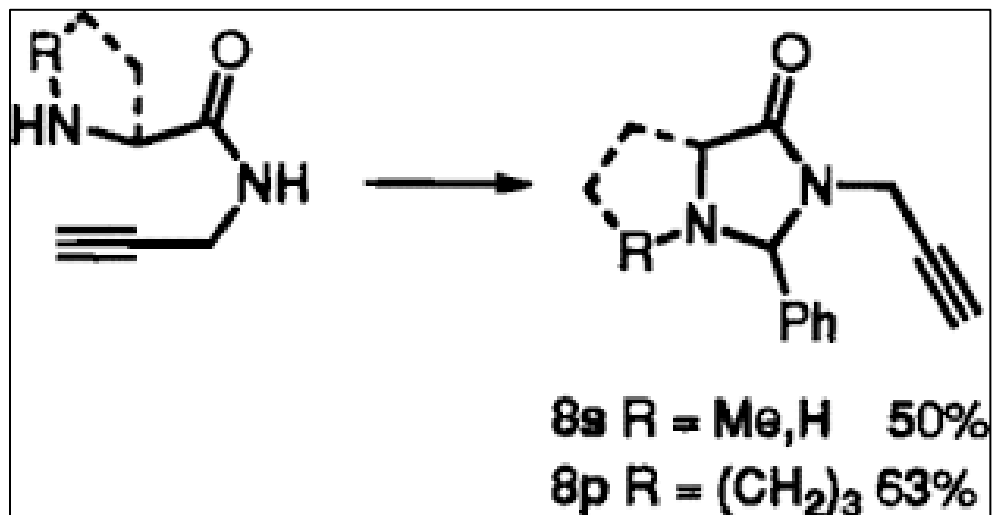


Please insert the requested items in the space provided. Please do not use more than the space provided. If your submission does not adhere to this template, points will be deducted from your assignment.

*Insert figure here, with border and caption.*



*Figure 1. A synthetic scheme for chemistry*

Type your first and last name below

**Hudson Hurtig**

Insert table of elements with property (K) here, with border, caption and citation.

**Table 1.** Boiling points for a series of elements<sup>1</sup>

Element	Atomic Number	Boiling Point (K)
K	19	1032
Ca	20	1757
Ga	31	2477
Ge	32	3093
As	33	887

<sup>1</sup>Periodic Table, <https://ptable.com> (accessed September 7, 2022).

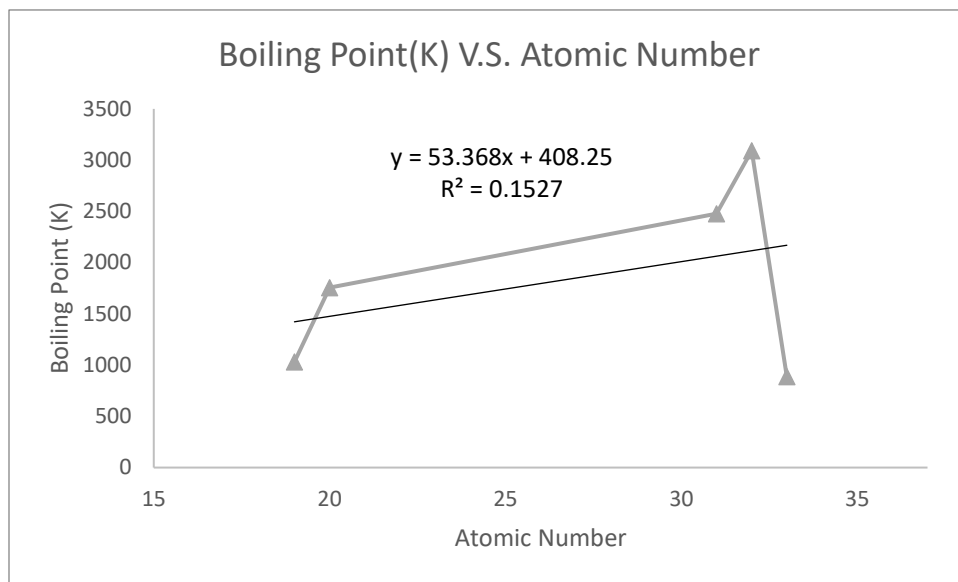
Insert table of elements with property and mathematical transformations (from MS-Excel) here, with border, caption and citation.

**Table 2.** Boiling points and data translations and conversions for a series of elements

Element	Atomic Number	Boiling Point (K)	Inverse	Log	Boiling Point (C)	Boiling Point (F)
K	19	1032	0.000969	3.01368	758.85	1397.93
Ca	20	1757	0.000569	3.244772	1483.85	2702.93
Ga	31	2477	0.000404	3.393926	2203.85	3998.93
Ge	32	3093	0.000323	3.49038	2819.85	5107.73
As	33	887	0.001127	2.947924	613.85	1136.93

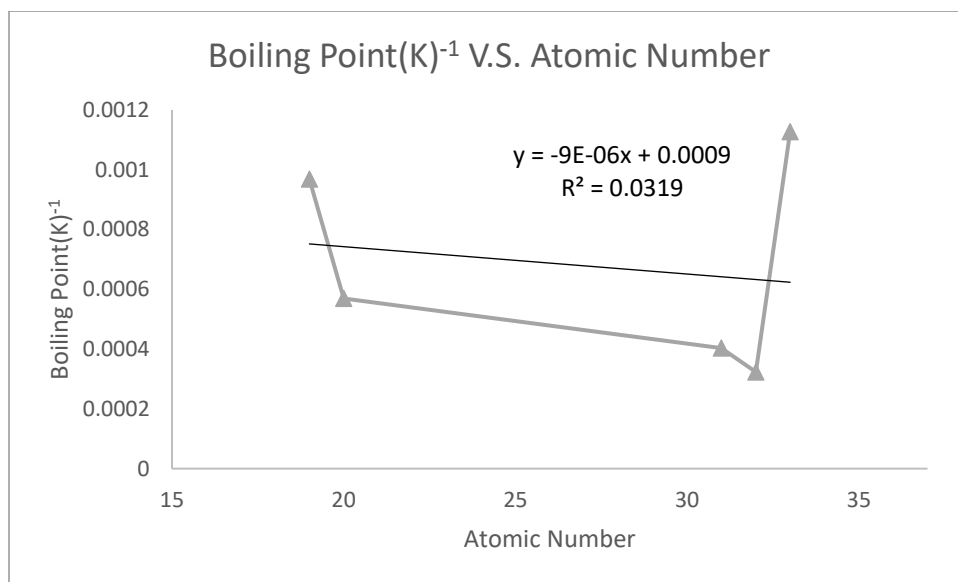
<sup>1</sup>Periodic Table, <https://ptable.com> (accessed September 7, 2022).

*Insert property (K) vs. atomic number graph (direct graph) here, with caption.*



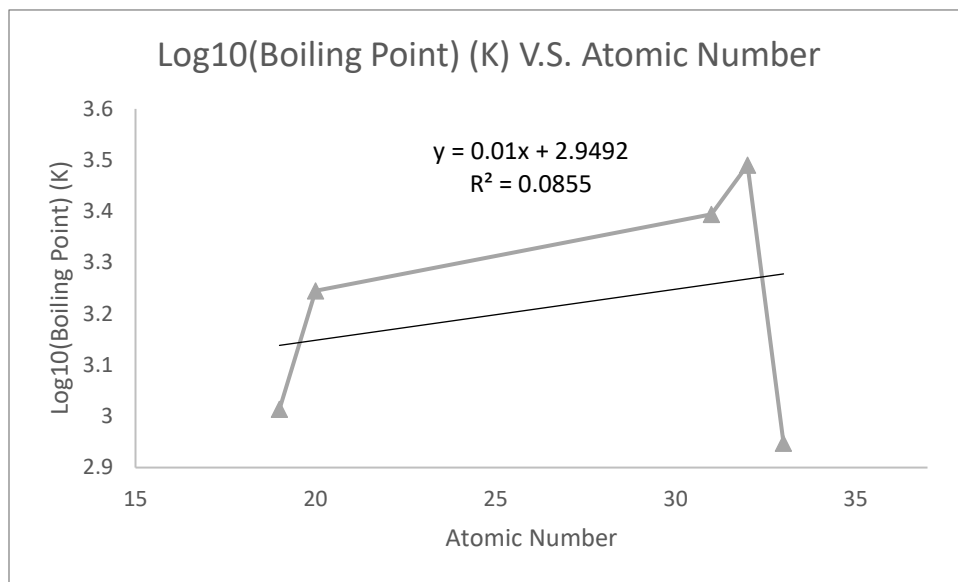
**Figure 2.** Boiling Point in degrees Kelvin Vs Atomic Number for a series of elements

*Insert inverse of property (1/K) vs. atomic number graph (inverse graph) here, with caption.*



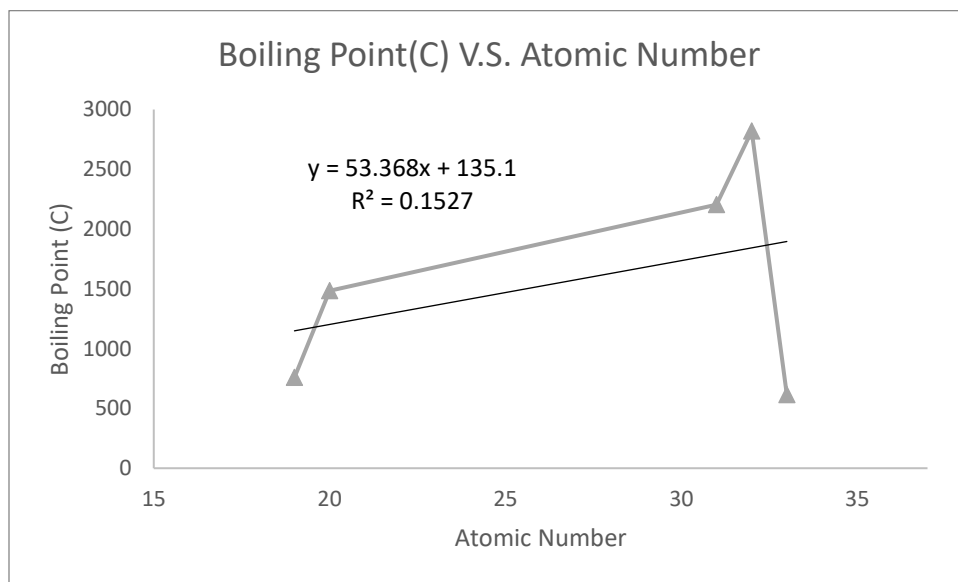
**Figure 3.** Inverse of boiling point Vs Atomic Number for a series of elements

*Insert logarithm of property (logK) vs. atomic number graph (logarithmic graph) here, with caption.*



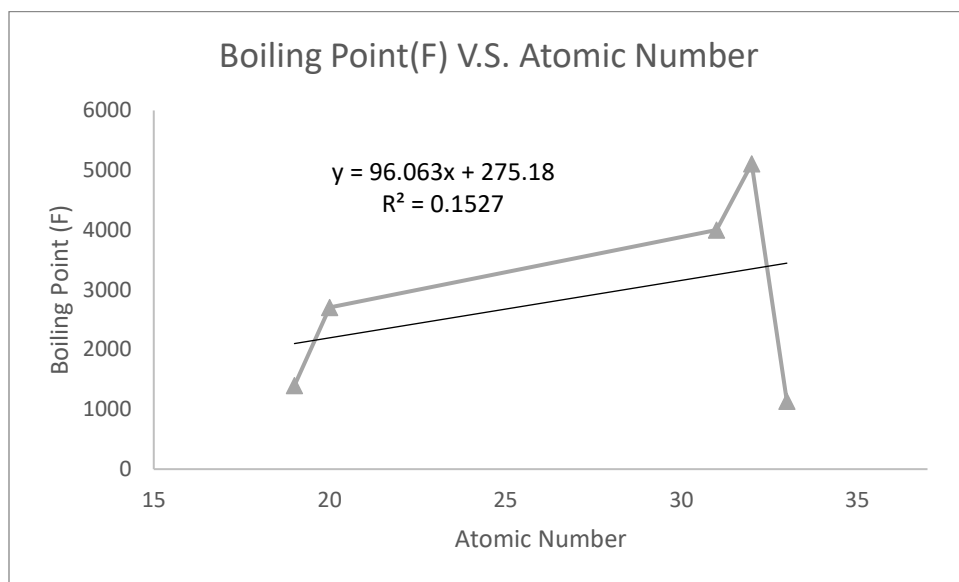
**Figure 4.** Log10(Boiling point) Vs Atomic Number for a series of elements

*Insert property (°C) vs. atomic number graph (°C graph) here, with caption.*



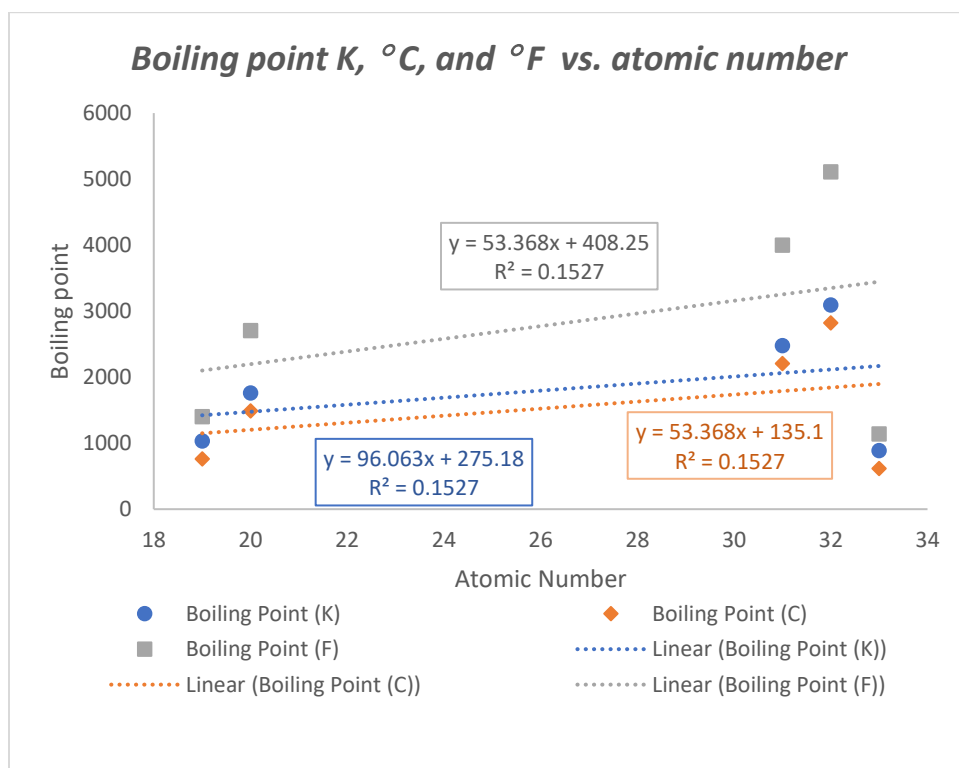
**Figure 5.** Boiling point in degrees Celsius Vs Atomic number for a series of elements

Insert property (°F) vs. atomic number graph (°F graph) here, with caption.



**Figure 6.** Boiling point in degrees Fahrenheit Vs atomic number for a series of elements

Insert graph with property in K, °C, and °F vs. atomic number here, with caption.



**Figure 7.** Boiling point in degrees Kelvin, Celsius, and Fahrenheit Vs atomic number for a series of elements



I<sup>-1</sup>

**Respond to the following two questions in the space provided.**

1. Make a table like the one below and fill in the values from your graphs.

*Table 3. Table of statistical data and labels from graphs above*

Graph	x-axis label	y-axis label	Equation of best fit line	R-squared value
Direct	Atomic Number	Boiling point in Degrees K	$y = 53.368x + 408.25$	0.15727
Inverse	Atomic Number	Boiling Point(K) <sup>-1</sup>	$y = -9E-06x + 0.0009$	0.0319
Logarithmic	Atomic Number	Log10(boiling point) (K)	$y = 0.01x + 2.9492$	0.0855
Degrees C	Atomic Number	Boiling point in Degrees C	$y = 53.368x + 135.1$	0.15727
Degrees F	Atomic Number	Boiling point in Degrees F	$y = 96.063x + 275.18$	0.15727

2. Choosing between "Direct", "Inverse", and "Logarithmic"; which has an R<sup>2</sup> value closest to 1?

Direct has the R squared value closest to 1.

3. Why are the R<sup>2</sup> values for the temperature plot in K, °C, and °F the same?

They are the same because their relative distribution about the regression line is the same. In other words, the chart that compares the data proves that statistical analysis will provide the standard results in different units.

**This is the end of your assignment. You should now save this as a pdf and submit it to Gradescope. Remember to tag pages while submitting to Gradescope.**