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MATH2001

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<div align="center">

What is Right for Me – Yale or Penn

College Statistics Analysis
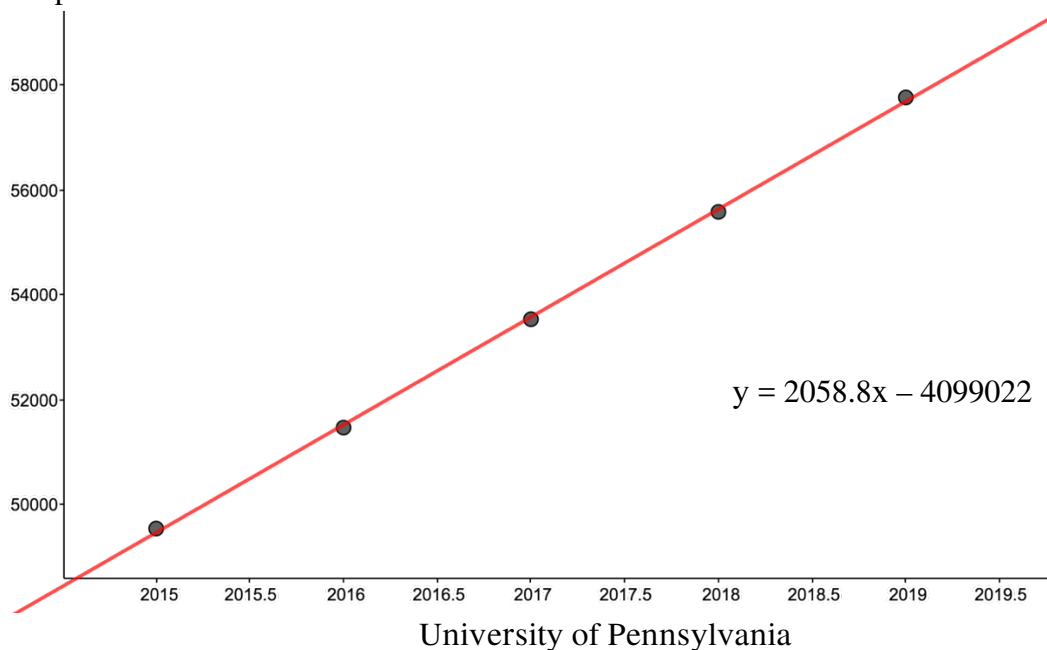
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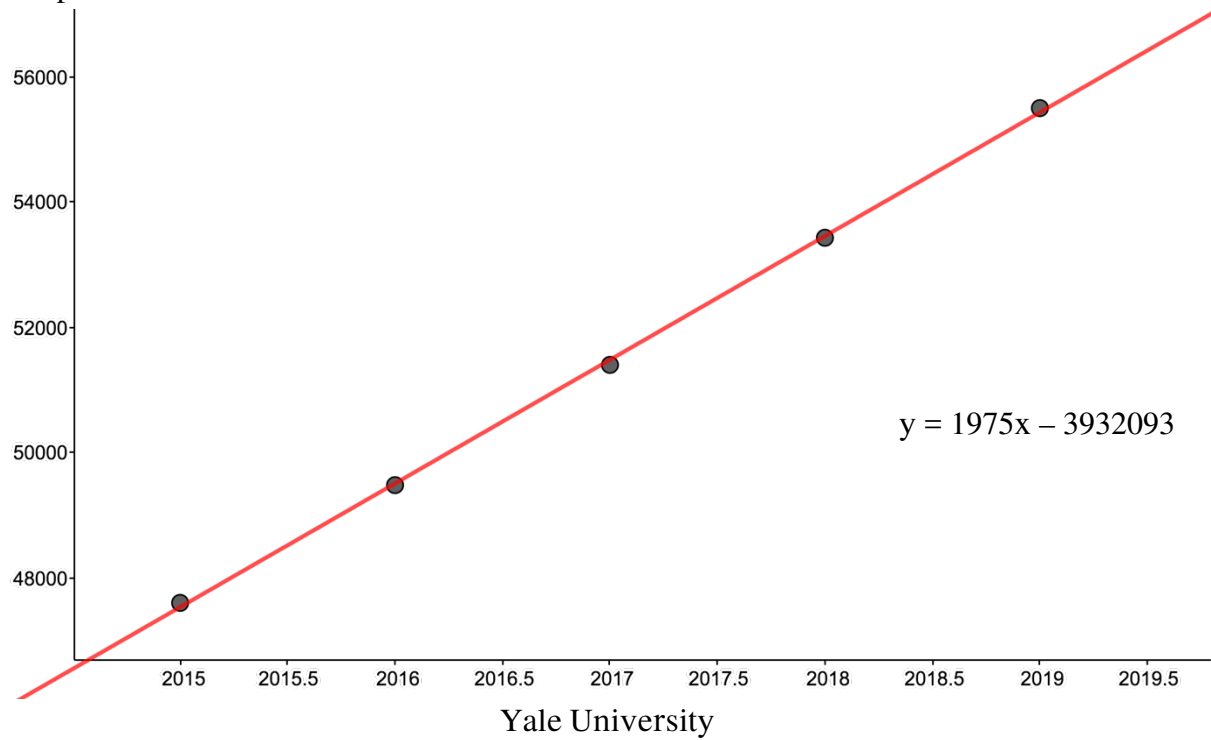
TUITION AND FEES ANALYSIS

Data Collection

Table 1.

	Tuition and Fees ($)	
Year	**University of Pennsylvania**	**Yale University**
2015	49536	47600
2016	51464	49480
2017	53534	51400
2018	55584	53430
2019	57770	55500

Scatter Plot

Graph 1.

$y = 2058.8x - 4099022$

University of Pennsylvania

Graph 2.

$y = 1975x - 3932093$

Yale University

Correlation Coefficient (*r*)
UPenn: 0.9998
Yale: 0.9998

Standard Deviation
UPenn: 2912.24
Yale: 2793.70

Range
UPenn: 57770 – 49536 = $8234
Yale: 55500 – 47600 = $7900

Mean
UPenn: $53577.6
Yale: $51482

Median
UPenn: $53534
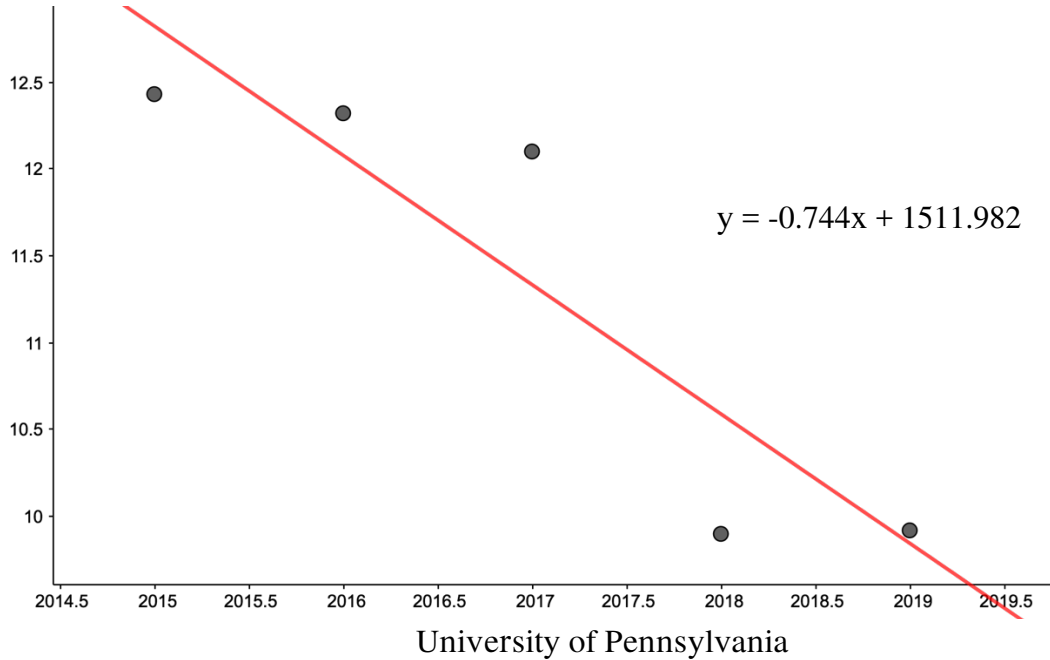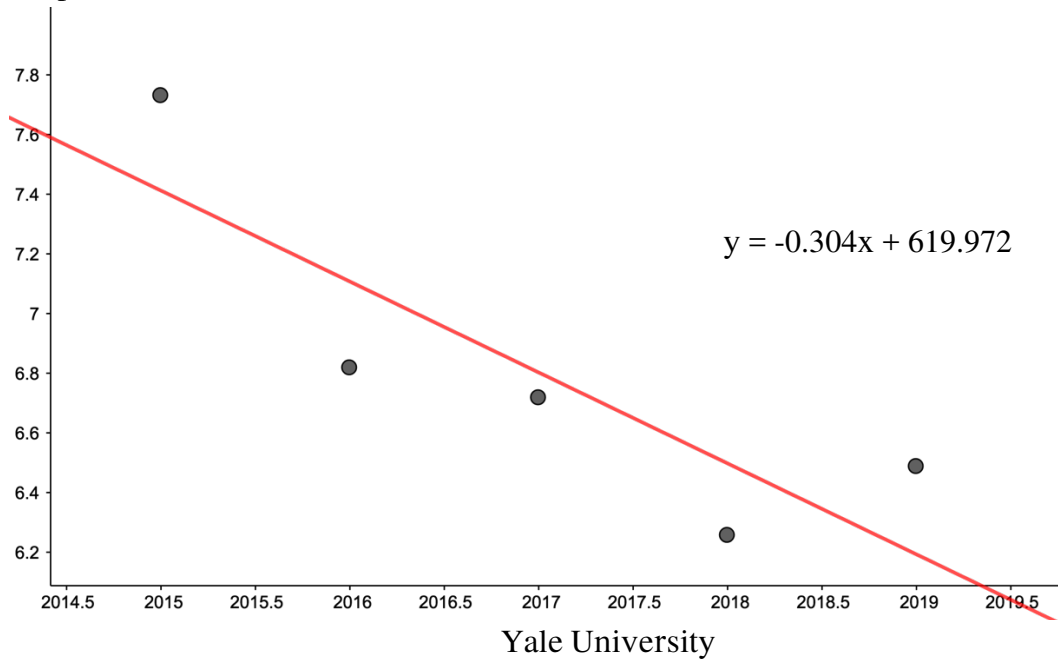Yale: $51400

ACCEPTANCE RATE ANALYSIS

Data Collection

Table 2.

Year	Acceptance Rate (%)	
	University of Pennsylvania	Yale University
2015	12.43	7.73
2016	12.32	6.82
2017	12.10	6.72
2018	9.90	6.26
2019	9.92	6.49

Scatter Plot

Graph 3.

$y = -0.744x + 1511.982$

University of Pennsylvania

Graph 4.

$y = -0.304x + 619.972$

Yale University

Correlation Coefficient (r)
UPenn: -0.9012
Yale: -0.8567

Standard Deviation
UPenn: 1.17
Yale: 0.50

Range
UPenn: 12.43 – 9.9 = 2.53%
Yale: 7.73 – 6.26 = 1.47%

Mean
UPenn: 11.33%
Yale: 6.80%

Median
UPenn: 12.10%
Yale: 6.72%

LOCATION ANALYSIS

Population/Ethnic Distributions

Philadelphia, PA (UPenn):

- Population: 1,580,863
- Ethnic distribution:

  Table 3.

Race & Ethnic	Percentage
White	34.9%
Black or African American	41.3%
Hispanic or Latino	14.1%
Asian	7.0%
American Indian and Alaska Native	0.2%
Other Race/Two or More Races	2.4%

New Haven, CT (Yale):

- Population: 131,014
- Ethnic distribution:

  Table 4.

Race & Ethnic	Percentage
White	30.3%
Black or African American	31.5%
Hispanic or Latino	30.4%
Asian	4.6%
American Indian and Alaska Native	0.2%
Other Race/Two or More Races	2.9%

Income/Careers

Philadelphia, PA (UPenn):

- Per capita income: $24,811
- Median household income: $40,649
- Individuals below poverty level: 25.8%
- Top 3 employment industries: healthcare 20.5%, retail 10.3%, education 9.9%

New Haven, CT (Yale):

- Per capita income: $24,688
- Median household income: $39,191
- Individuals below poverty level: 25.6%
- Top 3 employment industries: education 21.1%, healthcare 21.0%, retail 8.9%

Crime and Crime Rates

Philadelphia, PA (UPenn):

- Crime index: 10/100, safer than 10% of U.S. cities.

Table 5.

Annual Crimes			
	Violent	Poverty	Total
Number of Crimes	14,943	48,276	63,219
Crime Rate (per 1,000 residents)	9.45	30.54	39.99

New Haven, CT (Yale):

- Crime index: 5/100, safer than 5% of U.S. cities.

Table 6.

Annual Crimes			
	Violent	Poverty	Total
Number of Crimes	1,104	5,503	6,607
Crime Rate (per 1,000 residents)	8.43	42.00	50.43

Educational Attainment

Philadelphia, PA (UPenn):

- Attending college: 6.5%
- High school graduates: 83.3%
- College graduates: 27.1%

New Haven, CT (Yale):

- Attending college: 9.4%
- High school graduates: 84.6%
- College graduates: 33.9%

REPORT ON OPTIONS

There have always been dilemmas when we choose our dream school. Hence, the final result must be a really careful choice considering many aspects like tuition and fee, acceptance rate, population of the city, crime rates of the city, etc. Based on statistics we can then get a very logical and thoughtful choice. University of Pennsylvania (UPenn) and Yale University (Yale) are both really good schools, but there are still advantages and disadvantages about each of them.

UPenn's tuition and fees is more expensive than Yale university, around $2000. However, the acceptance rate in UPenn is also greater than Yale. In 2021 the acceptance rate in UPenn is 8.36%, and Yale's acceptance rate is 5.59%, according to the lines of best fit in the graphs. It seems like a close value to each other but in real life this 3% might be thousands of people. Based on tuition and acceptance rate, I think I will choose UPenn because there is a much higher chance to be accepted and the tuition is not very much higher than Yale.

When comparing and contrasting Philadelphia and New Haven, I am most concerned about crime and crime rates, because I think safety is the most important thing. The total number of annual crimes in Philadelphia is much greater than New Haven, but the crime rate is smaller and the crime index is also smaller. In addition, the per capita income and the median household income is greater than New Haven. However, the educational attainment and the education industry in New Haven is a lot better than Philadelphia, which is also very important because education is the main reason why I wanted to study in America. With a good education atmosphere, I believe I can learn better.

Based on the analysis in the previous paragraphs, I think my choice would still be University of Pennsylvania, because of its higher acceptance rate, lower crime rates and higher income. Yale and UPenn are both in the Ivy League, which means that the education atmosphere is not going to be horrible. With all variables considered, the University of Pennsylvania is more suitable for me.

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