

How much does the President earn?

Monday, February 17, 2020 is a Federal and state holiday called Presidents' Day. The holiday was created by an act of congress in 1880 to celebrate George Washington's birthday, February 22, 1732. Later it was decided that Presidents' Day should also honor Abraham Lincoln's birthday. The holiday is now meant to honor all U.S. presidents and is associated with honoring Purple Heart medal recipients, and veterans. Presidents' day has also come to mean a commercial sales event especially for the sale of automobiles.

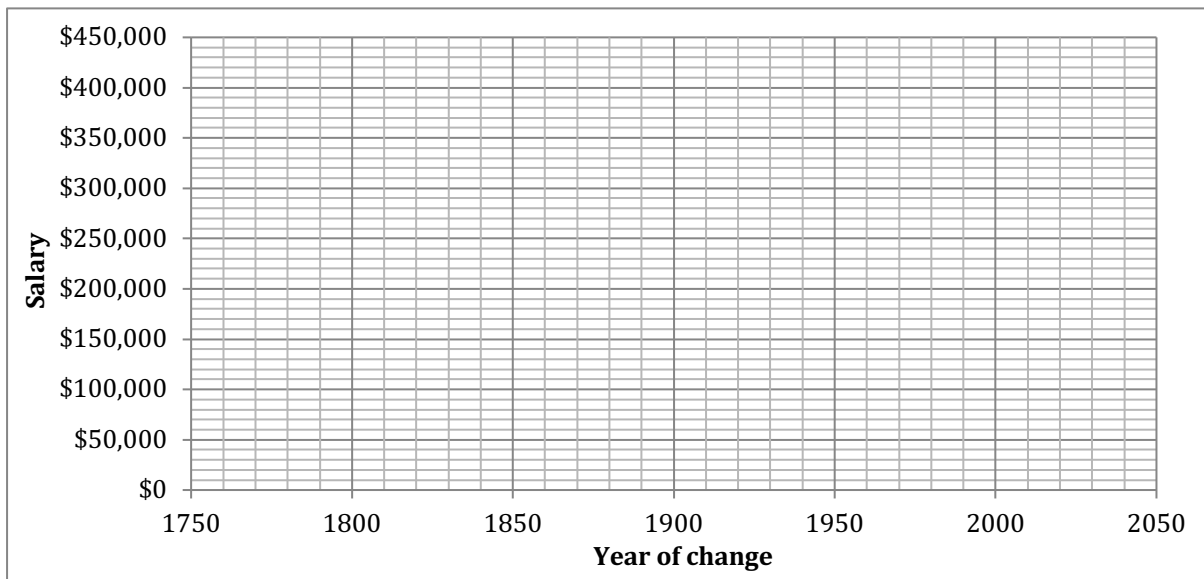
Have you noticed the spelling of Presidents' Day? Both *Presidents Day* and *Presidents' Day* are correct spellings of the holiday name. However, President's Day is incorrectly spelled since the holiday celebrates more than one president.

We started wondering about how much presidents earn every year. Is the President's income magnificent? Let's see.

Surprisingly the US president's salary has only changed 6 times since 1789. Changing the president's salary requires an act of congress¹. Below are the 6 years of presidential salary change since George Washington became our first president.

Effective Year	Salary Amount
1789	\$25,000
1873	\$50,000
1909	\$75,000
1949	\$100,000
1969	\$200,000
2001	\$400,000

1. I think this data would make an interesting graph. Create a scatter plot below that shows the 6 salaries and the year that they went into effect.



2. It would be interesting to create a chart that showed the exact salary for all of the years in between salary raises. Do you think your chart would be a continuous curve, a straight line, or something else?

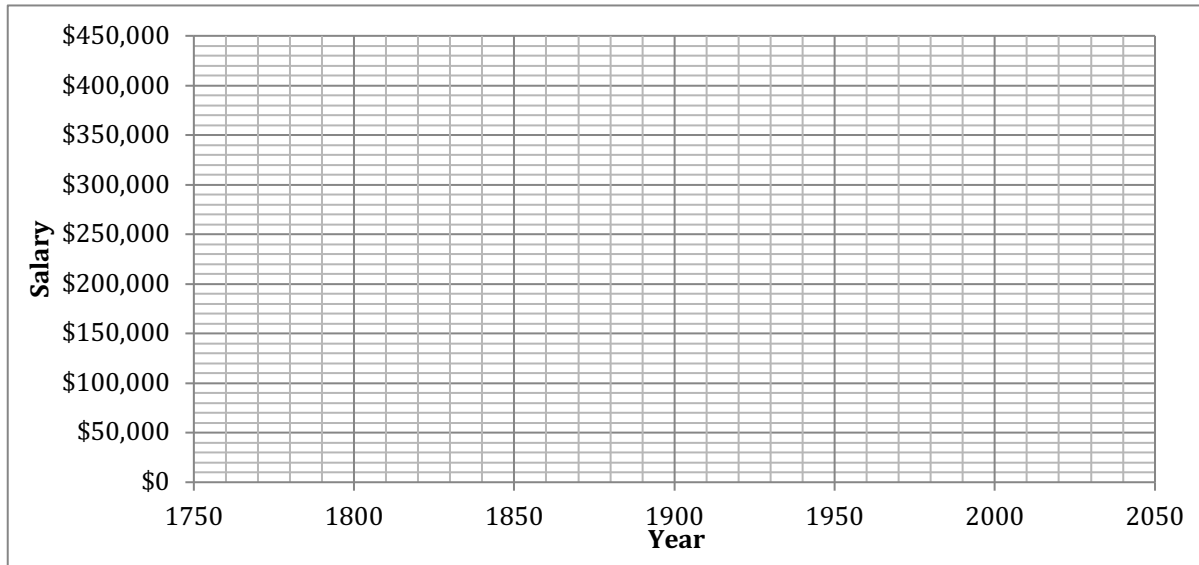
3. What was the President's salary in 1810?

a. In 1900?

b. In 1970?

Mark those points on your graph.

4. A chart that shows data that stays the same for a period of time is called a step graph. Try to demonstrate, accurately, the exact salaries that presidents have received since 1789 in the chart below.



5. Do you think that past and present presidents were paid well for their service? Please explain your thinking.

I wondered what those past salaries would be in today's economy. So, I did some research. There are a lot of considerations to include but here is a pretty simple way to calculate present value. The CPI is the **Consumer Price Index**. It is a way of comparing how much an apple (for instance) cost in 1789 versus how much an apple costs today. This is one formula for converting a value to present day dollars.

$$\text{Today's value} = \text{Value at the time} \cdot \text{CPI}$$

So if George Washington earned \$25,000 in 1789 and the CPI from 1789 was 28.6, I would do this math:

$$\text{Today's value of George W's salary} = \$25,000 \cdot 28.6 = \$715,000$$

The meaning of the CPIs isn't so difficult to understand. If something cost \$1 in 1789 than that item would cost \$28.60 in 2019.

6. Use my formula to complete the table below and see what these president's salaries would be equal to in today's money (2019 money).

Year	President	Salary	CPI calculated in 2019 dollars	Adjusted salary
1789	Washington	\$25,000	26.08	\$715,000
1873	Grant	\$50,000	20.98	
1909	Taft	\$75,000	27.66	
1949	Truman	\$100,000	10.58	
1969	Nixon	\$200,000	6.86	
2001	Bush	\$400,000	1.42	

7. Why do you think that the CPI values get smaller (except for the CPI when Taft was president) as the date approaches our present time? Please explain your reasoning.

8. Why do you suppose 1909 showed an increase in CPI value instead of a decrease?
9. The Consumer Price Index can help us compare the salary of past presidents like Washington and Lincoln (president in 1861, CPI of 27.3) with presidents like Bush and Obama. How does Mr. Trump's salary, Mr. Obama's salary (or George Bush's) compare to past presidents? Does Mr. Trump deserve a raise?
10. When you become President of the United States about how much do you expect your salary to be? Explain your reasoning.
- Extension for algebra students - Is presidential pay a *function* of time? Explain how you know.

¹Article 2 of the US constitution says, "The President shall, at stated Times, receive for his Services, a Compensation, which shall neither be increased nor diminished during the Period for which he shall have been elected, and he shall not receive within that Period any other Emolument from the United States, or any of them."

Sources:

<http://www.presidentsusa.net/presidentsalaryhistory.html>

http://www.slate.com/articles/news_and_politics/explainer/2001/01/a_presidential_salary_faq.html

[United States Department of Labor](http://www.measuringworth.com/uscompare/)

<http://www.measuringworth.com/uscompare/>

<http://www.in2013dollars.com/1789-dollars-in-2016?amount=100>