

## Practice with linear trend calculations and predictions

Use Desmos to graph two of the following data sets, then answer the questions below that data.

### Average Tuition at Private Colleges and Universities

Source: Trends in Higher Education:

<http://trends.collegeboard.org/college-pricing/figures-tables/tuition-fees-room-board-time>

Prices listed in 2014 dollars (actual cost at that time is adjusted for inflation to reflect current value)

Time (Year)	Tuition and fees (\$)
1980	10,420
1990	17,065
2000	22,159
2010	29,405
2014	31,231

1. What is the “r” correlation factor for your equation?
2. What is your equation?
3. What does the slope of your line represent?
4. Predict the cost of college in 1995
5. Predict the cost of college in 2016, the year you will be attending.
6. Predict the cost of college in 2040, about the time your kids will be going to college.
7. In what year, according to this trend, would college have been free?
8. According to this trend, how much would a Jesus have **been paid** to go to college (assume he would be 18 when he went to college)?
9. What is the problem with using this trend to answer these questions?
10. Which two prediction do you feel most comfortable with?

### Temperature in San Francisco on Sunday, August 30, 2015

Source: Wunderground.com weather site

Time is given in 24 hour clock format to allow for graphing.

Time (hour)	Temperature (°F)
9	65
10	66
11	67
12	68
13	70
14	71

### Temperature forecasts for San Francisco on Saturday, September 6<sup>th</sup>, 2015

Time is given in 24 hour clock format to allow for graphing.

Time (hour)	Temperature (°F)
7	62
8	63
9	67
10	69
11	72
12	75
13	76

For the temperature data set you were given, answer the following:

1. What is the “r” correlation factor for your equation?
2. What is your equation?
3. What does the slope of your line represent?
4. What does the y-intercept represent?
5. How hot was it at 12:30?
6. How hot will it be at 5:00? (17:00)
7. How hot will it be at midnight? (24:00)
8. Why do these two predictions not make sense?