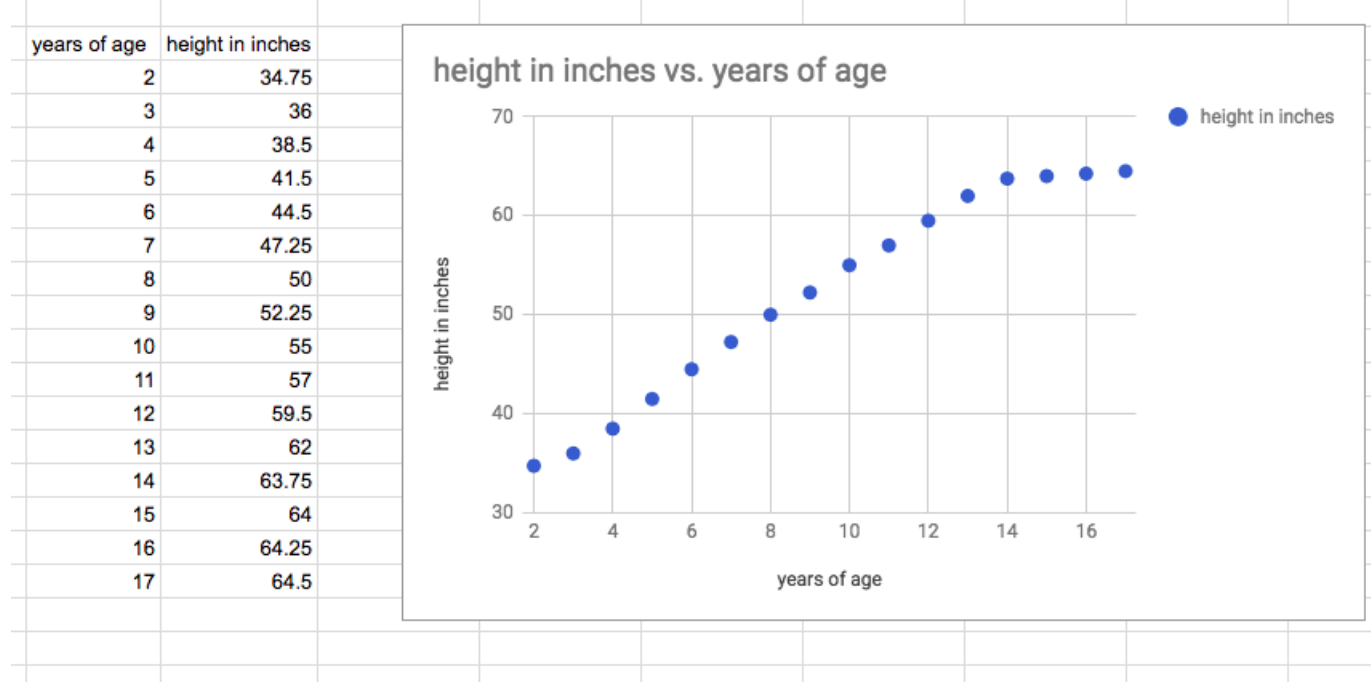# 2-1 EXAMPLE: AVERAGE RATE OF CHANGE

The table below gives the height (in inches) of a girl every year starting at 2 years of age. Each point in the table is plotted on the graph on the right.

years of age	height in inches
2	34.75
3	36
4	38.5
5	41.5
6	44.5
7	47.25
8	50
9	52.25
10	55
11	57
12	59.5
13	62
14	63.75
15	64
16	64.25
17	64.5

height in inches vs. years of age

1. Find her average rate of growth from year 2 to year 10.
   2.53125 inches per year

2. Find her average rate of growth from year 9 to year 10.
   2.75 inches per year

3. Find her average rate of growth from year 10 to year 17.
   1.357 inches per year

4. Find her average rate of growth from year 10 to year 11.
   2 inches per year

5. *Estimate* her rate of growth on the instant of her 10th birthday.
   2.375 inches per year (average the rates of change on either side)

6. Use the plotted points to sketch an approximation of this girl's growth curve and sketch the four secant lines and one tangent for which you found the slope in parts 1-5 above.