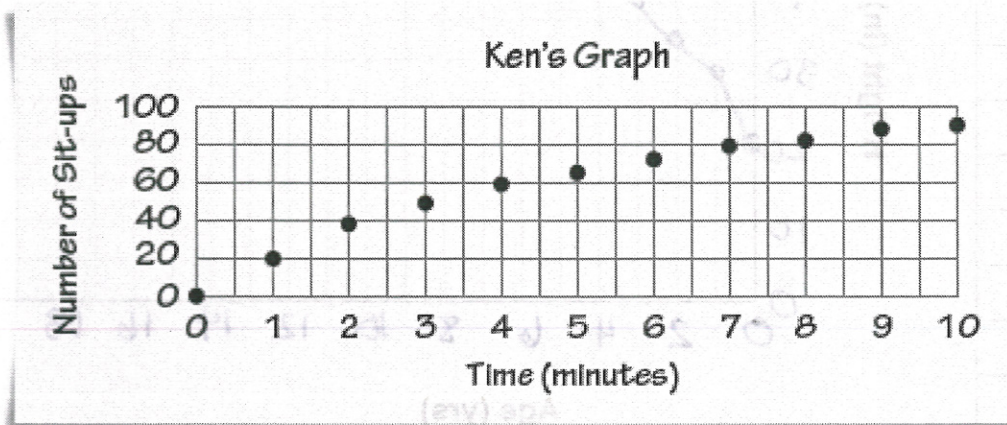
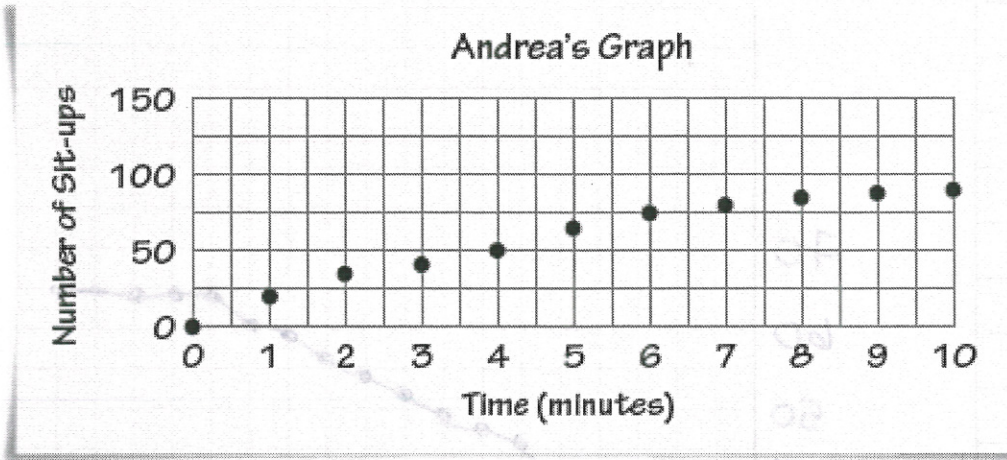


Variables and Patterns  
Investigation 1.2  
ACE

Name Pyne solutions  
Date \_\_\_\_\_ Hour \_\_\_\_\_

5. Students have a test to see how many sit-ups they can complete in 10 minutes. Andrea and Ken plot their results. Their graphs are shown below.



- a. Ken claims that he did better because the points on his graph are higher than the points on Andrea's graph. Is Ken correct? No

Explain. At 10 minutes, both students have completed approximately 90 sit-ups.

- c. Which person had the greatest average number of sit-ups per minute?

Depends.

Explain how you decided.

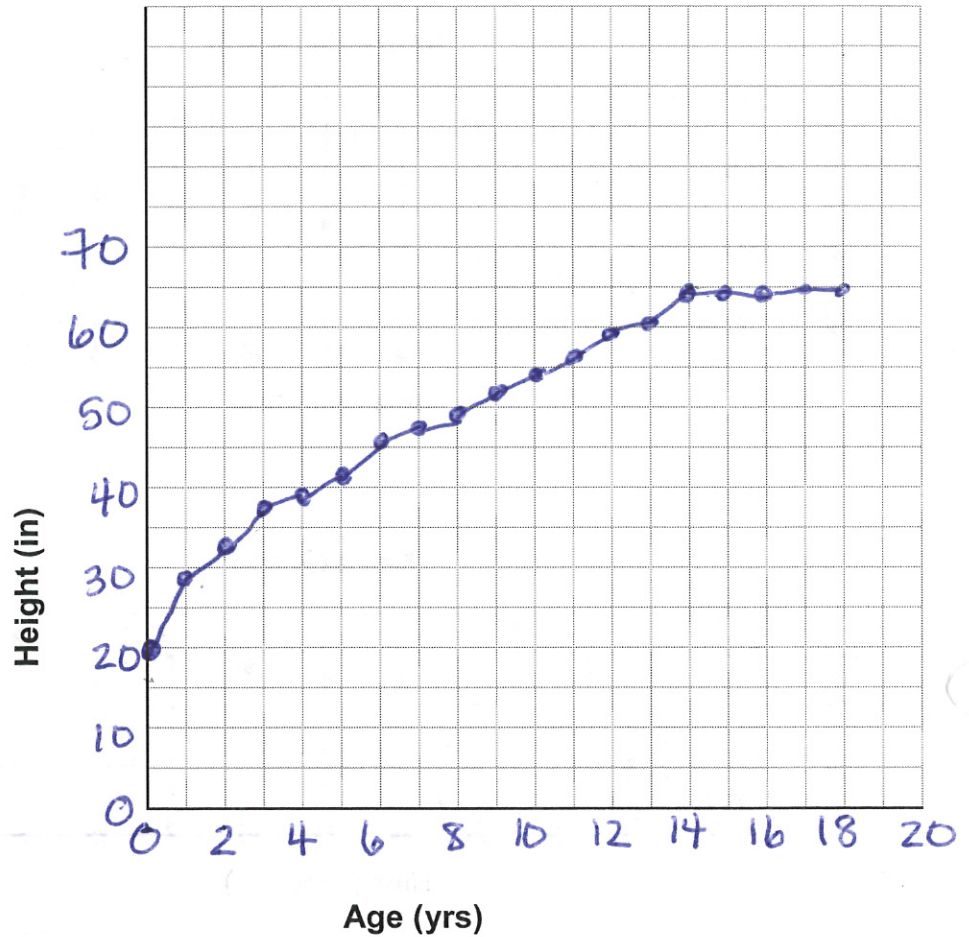
If you look at 10 minutes, they are about the same.  $\frac{90 \text{ sit-ups}}{10 \text{ min}} = 9 \text{ sit-ups each minute}$

6. Katrina's parents kept a record of her growth in height from birth until her 18th birthday. Their data is shown in the table below.

**Katrina's Height**

Age (yr)	Height (in.)
birth	20
1	29
2	33.5
3	37
4	39.5
5	42
6	45.5
7	47
8	49
9	52
10	54
11	56.5
12	59
13	61
14	64
15	64
16	64
17	64.5
18	64.5

- a. Make a coordinate graph of Katrina's height data.



- b. During which time interval(s) did Katrina have her greatest "growth spurt"? 0 → 1

- c. During which time interval(s) did Katrina's height change the least? 14 → 16

- d. Would it make sense to connect the points on the graph? Yes!

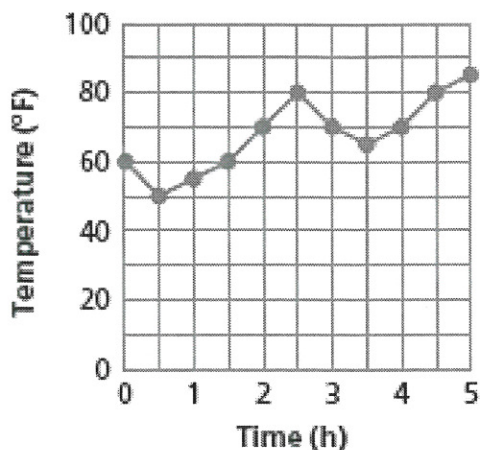
Why or why not? She is growing (or, not!) during the intervals between each year.

- e. Is it easier to use the table or the graph to answer parts (b) and (c)?

The graph.  
 Explain. There is a steep line between 0 → 1 and no growth (flat line) between 14 → 16.

9. Here is a graph of temperature data collected on the Ocean Bike Tours test trip from Atlantic City to Lewes.

**Temperatures for Day 1**



- a. Make a table of (time, temperature) data from this graph.

Time (h)	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
temp (°F)	60	50	55	60	70	80	70	65	70	80	85

- b. What is the difference between the day's lowest and highest temperatures?

$$85 - 50 = 35^\circ$$

- c. During which time interval(s) did the temperature rise the fastest?

1 → 1.5 OR 1.5 → 2 OR 4 → 4.5

During which time interval did it fall the fastest?

0 → 0.5h OR 2.5 → 3hr

- d. Do you prefer using the table or the graph to answer questions like those in parts (b) and (c)?

The graph

Explain your reasoning.

I know the "fastest" means the steepest line.

- e. What information is shown by the lines connecting the points?

It is possible to have a time @ in between the "dots" and a corresponding temp.