## Reasoning and Problem Solving - Statistics answers

- 1. A bar chart would be best. The totals are what needs to be shown and bar charts show differences between totals most clearly.
- 2. Carly. Her scale on the y-axis makes it easy to see the value of each bar. Clement's large scale makes it difficult to work out the value of each bar accurately.
- 3. Anya and Michael.
- 4. Shonae sunflower; Carly 63; Onua 230cm. Clement amaryllis.
- 5. No, neither rule is *always* correct. Anya's rule is disproven as the runner bean can grow 300cm but only needs 4,000ml of water per month, whereas amaryllis only grows 70cm and needs 4,800ml of water per month. Onua's rule is disproven as there are fewer amaryllis bulbs than daffodil bulbs but amaryllis grows taller than daffodils.
- 6. Various answers; for example: It could suggest that the infants' plant is growing faster than the juniors' plant. It could suggest that the infants' plant has received more water/sunlight than the juniors' plant.
- 7. No. Shonae has assumed that a steeper line shows faster growth but she has not looked at the scales of the graphs. The two sunflowers have in fact grown at the same rate (10cm per half week) in the first two weeks, both measuring exactly 40cm at the 2 week mark. The line only appears steeper on the infants' graph because it shows data for 4 weeks, whereas the juniors' graph shows data for 2 weeks
- 8. Both graphs show that the sunflowers are growing at a consistent rate for the first 5 weeks. However, at week 6, the juniors' sunflower grows rapidly. This suggests that Craig did use 'Super-Duper-Grow' on the sunflower.

9.	"The juniors would have won even if the contest finished at 6.5 weeks."	False
	"The juniors' sunflower grew faster than the infants' sunflower in the first 4 weeks."	True
	"If only we stopped at 8 weeks! Then it would have been a draw!"	True
	"The juniors only won by 10cm!"	False