

**Answers for support worksheet – Chapter 1**

- 1**
- a** a normal distribution (1)
 - b** one standard deviation (1)
 - c** The curve should be more or less the same as for the group of men. (1)
 - d** The curve should be a similar shape to the one shown, but shifted to the left. (1)
- 2**
- a** Error bars show the variability of the data (either the range or the standard deviation). (1)
 - b** The error bars in the histogram do not overlap for the two groups, so it is likely that there is a significant difference between the increases in height of the boys and the girls. (2)
 - c** To find out if the difference is statistically significant, a *t*-test could be carried out. (1)
 - d** degrees of freedom = sample size – 2
= (30 + 30) – 2
= 28 (1)
- 3**
- a** The degrees of freedom is 10 and the value of *t* is less than the critical value at the 5% level so we can accept the null hypothesis that there is no difference between the growth of the two groups of plants. (2)
 - b** The degrees of freedom is now 15 and the value of *t* exceeds the critical value so we reject the null hypothesis. There was a significant difference between the growth of the two groups of plants in this trial. (2)
 - c** It is assumed that the data follows a normal distribution. Outliers are excluded because they may prevent the two data sets from having a similar standard deviation. (2)