**Further Mathematics Practice SAT 1**

The table below shows the average number of eggs laid per week by a random sample of chickens with 33 different types of living conditions.

|  |  |  |
| --- | --- | --- |
| **Number of eggs per week** | | |
| **Cage chickens** | **Barn chickens** | **Free range chickens** |
| 5.4 | 4.7 | 4.0 |
| 5.1 | 4.2 | 4.1 |
| 5.8 | 3.9 | 4.4 |
| 5.6 | 4.9 | 4.3 |
| 5.2 | 4.1 | 4.2 |
| 4.7 | 4.0 | 4.3 |
| 4.9 | 4.4 | 3.9 |
| 5.0 | 4.5 | 3.9 |
| 5.1 | 4.6 | 4.0 |
| 5.4 | 4.1 | 4.1 |
| 5.5 | 4.2 | 4.1 |

1) Copy and complete the following table by calculating the mean and standard deviation of barn chickens and free range chickens correct to 1 decimal place.

|  |  |  |  |
| --- | --- | --- | --- |
| **Living conditions** | **Cage** | **Barn** | **Free range** |
| Mean |  |  |  |
| Standard deviation |  |  |  |

2) A particular free range chicken lays an average of 4.3 eggs per week. Calculate the *z*-score relative to this sample correct to 3 significant figures.

3) The number of eggs laid by free range chickens is normally distributed. A free range chicken has a *z*-score of 1.Approximately what percentage of chickens lay fewer eggs than this chicken?

4) Referring to the table showing the number of eggs per week, prepare five-number summaries for each set of data.

5) State the median of each set of data.

6) What could be concluded about the egg-producing capabilities of chickens in different living conditions?