Stratified Sampling

1) A school has 600 pupils. The number in each year group is shown below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year** | 7 | 8 | 9 | 10 | 11 |
| **Number of pupils** | 114 | 132 | 120 | 126 | 108 |
| **Stratified sample** |  |  |  |  |  |

A stratified sample of 100 pupils is to be taken on how students travel to school. How many pupils from each year group should be tested?

2) A small village has a population of 400. The population is classified by age as shown below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Age (years)** | 0 - 12 | 13 - 24 | 25 - 40 | 41 - 60 | 61 + |
| **Number of people** | 35 | 58 | 125 | 103 | 79 |
| **Stratified sample** |  |  |  |  |  |

A stratified sample of 50 villagers is planned. Calculate the number of people that should be sampled from each age group.

3) There are 250 workers in a factory. The table shows the number of each type of worker in the factory.

|  |  |  |  |
| --- | --- | --- | --- |
| **Managers** | **Craftsmen** | **Labourers** | **Administrators** |
| 25 | 130 | 54 | 41 |

A stratified sample of 40 workers is required. Calculate the number of each type of worker that should be chosen.

4) The table below shows the number of drink cartons that are filled in one hour by a factory:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Flavour** | Apple | Orange | Pineapple | Tropical | Strawberry |
| **No. of Cartons** | 135 | 300 | 175 | 190 | 200 |

How many cartons need to be selected from each flavor to give:

a) A 7.5% stratified sample?

b) A stratified sample of 130 cartons?