Stratified Sampling

1. Here is a table showing how many students there are at Geometry High

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | 7 | 8 | 9 | 10 | 11 |
| No of students | 100 | 120 | 115 | 130 | 126 |

I want to take stratified sample of 150 people from the school. How many year 11’s should I include in my sample.

32 year 11’s

1. Debbie is carrying out a survey to see how much people spend on groceries. She has the following information about which people shop at which supermarket in her town.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Supermarket | Sainsbury’s | Tesco | Aldi | Waitrose | M&S |
| No of shoppers | 6400 | 5100 | 4500 | 2000 | 1350 |

She wants to conduct a stratified sample of 200 people, how many people should she survey from each supermarket?

Sainsbury’s – 66 people

Tesco – 52 people

Aldi – 47 people

Waitrose – 21 people

M&S – 14 people

1. The table gives information about the number of 564 students doing extracurricular clubs at a secondary school to see how much time they spend on homework.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Club | Chess | Sports | Art | Music | Debating | Drama |
| Boys | 24 | 85 | 43 | 36 | 25 | 54 |
| Girls | 16 | 80 | 50 | 41 | 28 | 82 |

A stratified sample is to be carried out of size 60.

1. How many Boys from chess club should be sampled? 3 boys
2. How many girls from Drama should be sampled? 9 girls
3. In a teenage professional football club of 340 players, 18 are aged between 11 and 12. If a stratified sample of size 100 were to be carried out, how many 11-12 year olds should be included in the sample?

5 11-12 year olds

1. The table shows the number of male and female students attending an after school arts programme

|  |  |  |
| --- | --- | --- |
| Age (years) | Number of male students (strat. sample) | Number of female students (strat. sample) |
| 16 | 50 (6) | 30 (3) |
| 17 | 60 (7) | 40 (5) |
| 18 | 76 (9) | 54 (6) |
| 19 | 13 (1) | 24 (3) |

Copy and complete the table showing how many students from each category should be included in a stratified sample of size 40. Tricky one as rounding correctly gives total of 42, so I rounded male 19yo and female 16yo down. Beware!

1. The table fives information about the number of girls in 4 schools.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| School | A | B | C | D | Total |
| Number of girls | 126 | 82 | 201 | 52 | 461 |

1. A girl is selected at random, what is the probability she will be from school C? 0.436
2. A stratified sample of size 50 is taken, how many students from school C should be chosen? 22 students