

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.

2. 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?

3. 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.

- How many Boys from chess club should be sampled?
 - How many girls from Drama should be sampled?
4. 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. The table shows the number of male and female students attending an after school arts programme

Age (years)	Number of male students	Number of female students
16	50	30
17	60	40
18	76	54
19	13	24

Copy and complete the table showing how many students from each category should be included in a stratified sample of size 40.

6. The table gives information about the number of girls in 4 schools.

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

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

Stratified Sampling ANSWERS

- 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

- 2) 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

- 3) 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.

c) How many Boys from chess club should be sampled? 3 boys

d) How many girls from Drama should be sampled? 9 girls

- 4) 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

- 5) 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!

- 6) The table gives information about the number of girls in 4 schools.

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

a) A girl is selected at random, what is the probability she will be from school C? 0.436

b) A stratified sample of size 50 is taken, how many students from school C should be chosen? 22 students