

4th June

Higher 5-a-day



Corbettmaths

At a university, the ratio of first year students to second year students is 7:5.
 75% of the first year students belong to a club.
 20% of the second year students do not belong to a club.
 What percentage of all the first year and second year students belong to a club?

Handwritten solution for the first question:

$$\left(\frac{7}{12} \times \frac{3}{4}\right) + \left(\frac{5}{12} \times \frac{4}{5}\right) = \frac{37}{48} (77\%)$$

The diagram shows a tree diagram for the first question. For first year students (7/12), 75% (3/4) belong to a club (marked with a check) and 25% (1/4) do not (marked with an X). For second year students (5/12), 80% (4/5) belong to a club (marked with a check) and 20% (1/5) do not (marked with an X).

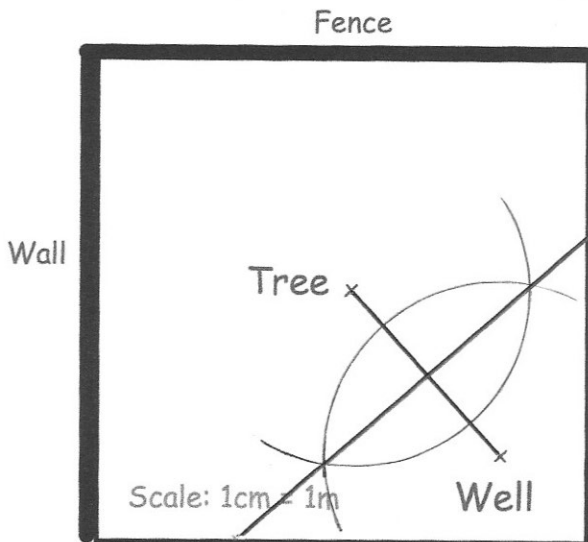
The length of a song is 182 seconds to the nearest second.
 Elena listens to the song 8 times consecutively.

Handwritten numbers: 181.5 182.5

Complete the error interval for the time Elena spent listening to the song.

Handwritten error interval: $1452 \dots \leq t < \dots 1460$

Olivia is deciding where to place a bench
 Show the possible positions of the bench for the rule
 The bench is an equal distance (equidistant) from the tree and the well.



Factorise

Handwritten factorisation: $y^2 - x^2 = (y - x)(y + x)$

Shape A has an area of 144cm²
 Shape B is similar to Shape A with sides 3 times larger.

Handwritten calculation: 144×3^2

Work out the area of Shape B

Handwritten area of Shape B: 1296 cm^2