Guide to:
Two way tables

maths Links

Explanation:

A **two-way table** sorts data into rows (one category) and columns (a second category). Every row adds across to its **Row Total** on the right, every column adds down to its **Column Total** at the bottom, and both sets of totals add to the **Grand Total** in the bottom-right corner.

Start with any row or column that has **only one missing value**, subtract from the total to fill it in, and repeat until every cell is complete. Read probability questions carefully to check the denominator.

Example 1: Complete the two-way table for 80 students choosing French or Spanish (bold numbers are the missing answers).

	French	Spanish	Total
Year 10	18	**27**	45
Year 11	**14**	21	**35**
Total	32	**48**	80

Y10 Spanish = 45 − 18 = **27**; Y11 French = 32 − 18 = **14**

Y11 Total = 80 − 45 = **35**; Spanish Total = 27 + 21 = **48**

Example 2: Using the completed table in Example 1:

(a) Find the probability a random student studies **Spanish**.

(b) A **Year 11 student** is chosen at random. Find P(French).

Solution:

(a) Out of all 80 students, 48 study Spanish:

P(Spanish) = $\frac{48}{80} = \frac{3}{5}$

(b) Out of the **35 Year 11s**, 14 study French:

Answer: (a) $\frac{48}{80}$ (b) $\frac{14}{35}$ (or $\frac{2}{5}$)

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