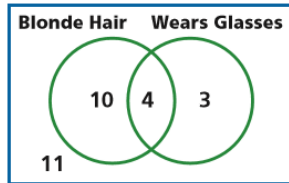


Problem of the Week: Week 2 (Sum2): Year 9: Probability

- Enumerate sets and unions / intersections of sets systematically, using tables, grids and Venn diagrams

Mrs Holt records whether children in her class have blonde hair and whether they wear glasses.



Which of the following do you agree with? Explain why.

- It is likely that a child chose at random from Mrs Holt’s class will have blonde hair.
- If a child in Mrs Holt’s class has blonde hair, they are likely to wear glasses.
- If a child in Mrs Holt’s class wears glasses, they are likely to have blonde hair.

What other true statements can you make based on the Venn Diagram?

Solution:

- It is not likely. There are 14 children with blonde hair (10+4) in Mrs Holt’s class out of a class of 28 (10+4+3+11) which is even chance.
- No. There are 4 children with blonde hair who wear glasses which is less than half or unlikely.
- Yes. There are 7 (4+3) children in Mrs Holt’s class with glasses and 4 of these have blonde hair. So more than half have blonde hair which is likely.

Data about the number of boys and girls in a school are given in a two-way table.

	Boy	Girl
Year 7	89	91
Year 8		

There are fewer students in Year 8 than there are in Year 7, but there are more girls in Year 8 than Year 7.

How might you complete the table? Explain your thinking.

NCETM: secondary assessment materials

Solution:

Find the total number of pupils in year 7. There are fewer students in year 8 than there are in year 7 so the total must be less than 180. There are more girls in year 8 than year 7 so that must be greater than 91. The remaining boys must be less than 89 by at least 1 more than the additional number of girls in year 8 to keep the total under 180.

	Boy	Girl	Total
Year 7	89	91	180
Year 8		>91	< 180
Total			

