

Solutions

2.1 Subtract the overlap: $18-7$.

2.2 $18+12-7=23$.

2.3 $30-23=7$.

3.1 False. If 18 cycle, 12 swim and 7 do both, the union has $18+12-7=23$. Adding without subtracting counts the overlap twice.

Local review guidance: show the chosen method; give the checked result; explain the condition or failed shortcut. This is authored classroom guidance.