SURDS
ADDING AND SUBTRACTING

NO CALCULATOR

Ref: G183. **1F1**

A1	A2	A3	A4
Express $\sqrt{3}+\sqrt{3}$ in the form $a\sqrt{3}$	Express $3\sqrt{5}+\sqrt{5}$ in the form $a\sqrt{5}$	Express $5\sqrt{2}+3\sqrt{2}$ in the form $a\sqrt{2}$	Express $8\sqrt{3}-3\sqrt{3}$ in the form $a\sqrt{3}$
B1 Express $\sqrt{12}+\sqrt{3}$ as a single surd in the form $a\sqrt{3}$	**B2** Express $\sqrt{18}-\sqrt{2}$ as a single surd in the form $a\sqrt{2}$	**B3** Express $\sqrt{12}+5\sqrt{3}$ as a single surd in the form $a\sqrt{3}$	**B4** Express $2\sqrt{20}-3\sqrt{5}$ as a single surd in the form $a\sqrt{5}$
C1 Express $\sqrt{27}+5\sqrt{3}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$.	**C2** Express $2\sqrt{5}+\sqrt{80}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$.	**C3** Express $7\sqrt{2}-\sqrt{18}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$.	**C4** Simplify $3\sqrt{63}-2\sqrt{7}$
D1 Express $\sqrt{20}+\sqrt{45}$ as a single surd in the form $a\sqrt{5}$, where a and b are integers and $a \neq 1$.	**D2** Express $\sqrt{50}+\sqrt{32}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$.	**D3** Express $2\sqrt{27}-\sqrt{48}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$.	**D4** Express $3\sqrt{125}-2\sqrt{45}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$.

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A1 Express $\sqrt{3} + \sqrt{3}$ in the form $a\sqrt{3}$ $2\sqrt{3}$	**A2** Express $3\sqrt{5} + \sqrt{5}$ in the form $a\sqrt{5}$ $4\sqrt{5}$	**A3** Express $5\sqrt{2} + 3\sqrt{2}$ in the form $a\sqrt{2}$ $8\sqrt{2}$	**A4** Express $8\sqrt{3} - 3\sqrt{3}$ in the form $a\sqrt{3}$ $5\sqrt{3}$
B1 Express $\sqrt{12} + \sqrt{3}$ as a single surd in the form $a\sqrt{3}$ $2\sqrt{3} + \sqrt{3} = 3\sqrt{3}$	**B2** Express $\sqrt{18} - \sqrt{2}$ as a single surd in the form $a\sqrt{2}$ $3\sqrt{2} - \sqrt{2} = 2\sqrt{2}$	**B3** Express $\sqrt{12} + 5\sqrt{3}$ as a single surd in the form $a\sqrt{3}$ $2\sqrt{3} + 5\sqrt{3} = 7\sqrt{3}$	**B4** Express $2\sqrt{20} - 3\sqrt{5}$ as a single surd in the form $a\sqrt{5}$ $4\sqrt{5} - 3\sqrt{5} = \sqrt{5}$
C1 Express $\sqrt{27} + 5\sqrt{3}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$. $3\sqrt{3} + 5\sqrt{3} = 8\sqrt{3}$	**C2** Express $2\sqrt{5} + \sqrt{80}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$. $2\sqrt{5} + 4\sqrt{5} = 6\sqrt{5}$	**C3** Express $7\sqrt{2} - \sqrt{18}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$. $7\sqrt{2} - 3\sqrt{2} = 4\sqrt{2}$	**C4** Simplify $3\sqrt{63} - 2\sqrt{7}$ $9\sqrt{7} - 2\sqrt{7} = 7\sqrt{7}$
D1 Express $\sqrt{20} + \sqrt{45}$ as a single surd in the form $a\sqrt{5}$, where a and b are integers and $a \neq 1$. $2\sqrt{5} + 3\sqrt{5} = 5\sqrt{5}$	**D2** Express $\sqrt{50} + \sqrt{32}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$. $5\sqrt{2} + 4\sqrt{2} = 9\sqrt{2}$	**D3** Express $2\sqrt{27} - \sqrt{48}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$. $6\sqrt{3} - 4\sqrt{3} = 2\sqrt{3}$	**D4** Express $3\sqrt{125} - 2\sqrt{45}$ as a single surd in the form $a\sqrt{b}$, where a and b are integers and $a \neq 1$. $15\sqrt{5} - 6\sqrt{5} = 9\sqrt{5}$

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