Math worksheet on *'Radicals - Multiplying Binomials (Values Only) (Level 3)'*. Part of a broader unit on *'Radicals - Multiplication Intro'*

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1 Multiply the radical expressions and simplify the answer

$$(4\sqrt{2}+\sqrt{11})\cdot(\sqrt{2}+3\sqrt{7})$$

a $4\sqrt{3}+\sqrt{22}+12\sqrt{14}-2\sqrt{77}$	**b** $9+12\sqrt{14}+3$
c $5+\sqrt{22}-12\sqrt{14}$	**d** $8+\sqrt{22}+12\sqrt{14}+3\sqrt{77}$
e $14-\sqrt{22}+3\sqrt{77}$	**f** $\sqrt{2}+\sqrt{22}+12\sqrt{14}-3\sqrt{77}$

2 Multiply the radical expressions and simplify the answer

$$(4\sqrt{2}-\sqrt{13})\cdot(3\sqrt{7}+\sqrt{3})$$

a $\sqrt{14}-3\sqrt{91}+4-\sqrt{39}$	**b** $8\sqrt{2}-3\sqrt{91}-\sqrt{39}$
c $12\sqrt{14}-3\sqrt{91}+\sqrt{6}-3\sqrt{39}$	**d** $12\sqrt{14}-3\sqrt{91}+4\sqrt{6}-\sqrt{39}$
e $12\sqrt{14}-3+4\sqrt{6}-\sqrt{39}$	**f** $\sqrt{14}-\sqrt{91}+4\sqrt{6}-\sqrt{39}$

3 Multiply the radical expressions and simplify the answer

$$(2\sqrt{7}+\sqrt{3})\cdot(\sqrt{11}-5\sqrt{2})$$

a $2\sqrt{77}+4\sqrt{14}+\sqrt{33}-5$	**b** $2-10\sqrt{14}+\sqrt{33}-5\sqrt{6}$
c $2\sqrt{77}-10\sqrt{14}+\sqrt{33}-5\sqrt{6}$	**d** $2\sqrt{77}-3\sqrt{14}-\sqrt{33}-5\sqrt{3}$
e $2\sqrt{77}-\sqrt{14}+\sqrt{33}-\sqrt{6}$	**f** $5\sqrt{77}-10+\sqrt{33}-5\sqrt{6}$

4 Multiply the radical expressions and simplify the answer

$$(\sqrt{7}-5\sqrt{5})\cdot(\sqrt{11}+2\sqrt{7})$$

a $\sqrt{77}+2-10\sqrt{35}$	**b** $3+5\sqrt{55}-10\sqrt{35}$
c $\sqrt{77}+14-5\sqrt{55}-10\sqrt{35}$	**d** $\sqrt{77}+9-2\sqrt{35}$
e $15+2\sqrt{55}-10\sqrt{35}$	**f** $\sqrt{77}+14-\sqrt{55}-\sqrt{35}$

5 Multiply the radical expressions and simplify the answer

$$(3\sqrt{3}+\sqrt{3})\cdot(\sqrt{7}+2\sqrt{7})$$

a $3+2\sqrt{21}+2\sqrt{21}$	**b** $7\sqrt{21}+2\sqrt{21}$
c $9\sqrt{21}+1+2\sqrt{21}$	**d** $6\sqrt{21}+6+2\sqrt{21}$
e $9\sqrt{21}+3\sqrt{21}$	**f** $9\sqrt{21}+3$

6 Multiply the radical expressions and simplify the answer

$$(3\sqrt{11}+\sqrt{5})\cdot(\sqrt{2}-2\sqrt{7})$$

a $3\sqrt{22}+\sqrt{10}-\sqrt{77}-2\sqrt{2}$	**b** $3\sqrt{22}-\sqrt{10}-6\sqrt{77}+\sqrt{35}$
c $3\sqrt{22}+\sqrt{10}-4\sqrt{77}-2\sqrt{35}$	**d** $3\sqrt{22}+\sqrt{10}+6\sqrt{77}-\sqrt{35}$
e $3\sqrt{22}+\sqrt{10}-6\sqrt{77}-2\sqrt{35}$	**f** $3\sqrt{22}+\sqrt{10}-3\sqrt{77}-2\sqrt{35}$

7 Multiply the radical expressions and simplify the answer

$$(3\sqrt{5}+\sqrt{2})\cdot(\sqrt{5}-3\sqrt{11})$$

a $20+\sqrt{55}+\sqrt{10}-3\sqrt{22}$	**b** $14+\sqrt{10}-3\sqrt{22}$
c $25-9\sqrt{55}+\sqrt{10}-3\sqrt{22}$	**d** $15-9\sqrt{55}-\sqrt{10}+\sqrt{22}$
e $15-9\sqrt{55}+\sqrt{10}-3\sqrt{22}$	**f** $16-9\sqrt{55}+\sqrt{22}$