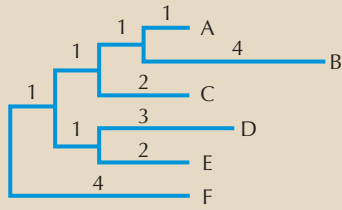


TABLE 27.10. UPGMA tree construction errors

For the following tree:



	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6																																																																																										
Distance matrix	<table border="1"> <tr><td></td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td></tr> <tr><td>B</td><td>5</td><td></td><td></td><td></td><td></td></tr> <tr><td>C</td><td>4</td><td>7</td><td></td><td></td><td></td></tr> <tr><td>D</td><td>7</td><td>10</td><td>7</td><td></td><td></td></tr> <tr><td>E</td><td>6</td><td>9</td><td>6</td><td>5</td><td></td></tr> <tr><td>F</td><td>8</td><td>11</td><td>8</td><td>9</td><td>8</td></tr> </table>		A	B	C	D	E	B	5					C	4	7				D	7	10	7			E	6	9	6	5		F	8	11	8	9	8	<table border="1"> <tr><td></td><td>AC</td><td>B</td><td>D</td><td>E</td></tr> <tr><td>B</td><td>4</td><td></td><td></td><td></td></tr> <tr><td>D</td><td>7</td><td>10</td><td></td><td></td></tr> <tr><td>E</td><td>6</td><td>9</td><td>5</td><td></td></tr> <tr><td>F</td><td>8</td><td>11</td><td>8</td><td>9</td></tr> </table>		AC	B	D	E	B	4				D	7	10			E	6	9	5		F	8	11	8	9	<table border="1"> <tr><td></td><td>AC</td><td>B</td><td>DE</td></tr> <tr><td>B</td><td>4</td><td></td><td></td></tr> <tr><td>DE</td><td>6.5</td><td>9.5</td><td></td></tr> <tr><td>F</td><td>8</td><td>11</td><td>8.5</td></tr> </table>		AC	B	DE	B	4			DE	6.5	9.5		F	8	11	8.5	<table border="1"> <tr><td></td><td>ACB</td><td>DE</td></tr> <tr><td>DE</td><td>8</td><td></td></tr> <tr><td>F</td><td>9.5</td><td>9.5</td></tr> </table>		ACB	DE	DE	8		F	9.5	9.5	<table border="1"> <tr><td></td><td>ABCDE</td></tr> <tr><td>F</td><td>9</td></tr> </table>		ABCDE	F	9	No new matrix
	A	B	C	D	E																																																																																											
B	5																																																																																															
C	4	7																																																																																														
D	7	10	7																																																																																													
E	6	9	6	5																																																																																												
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F	8	11	8.5																																																																																													
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F	9.5	9.5																																																																																														
	ABCDE																																																																																															
F	9																																																																																															
Identify smallest D	A ↔ C = 4	D ↔ E = 5	AC ↔ B = 4	ACB ↔ DF = 8	ABCDE ↔ F = 9																																																																																											
Taxa joined	A and C	D and E	A and C with B	ABC with DE	ABCDE with F																																																																																											
Subtree																																																																																																
Comments					Note how this is not the same as the starting tree.																																																																																											

From <http://www.icp.ucl.ac.be/~opperd/private/upgma.html>.