

## LESSON 2

# Prime Factorization Trees

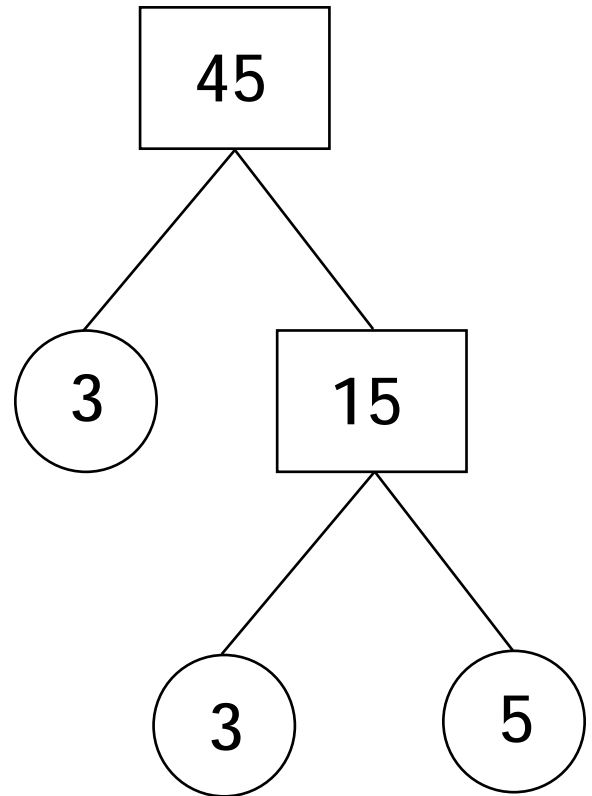
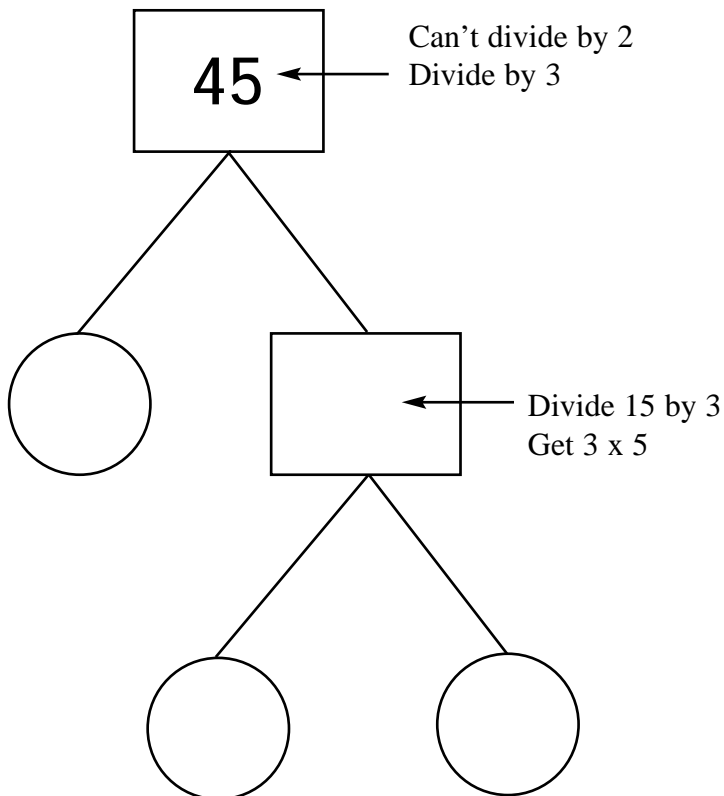
The Prime Factorization of any whole number greater than “2” can be expressed using a factor tree.

The solution of a factor tree problem requires repeated division by prime numbers. Start with the smallest prime “2” and continue dividing until this is no longer possible. Then try dividing with the next highest prime “3.” When division by “3” is no longer possible, go to the next highest prime “5” and repeat the division process. Next try 7, 11, etc.

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### Complete the Factor Tree:

Example:



# Complete Each Factor Tree By Dividing By The Lowest Prime Factor

<pre>graph TD; 4[4] --- 2((2)); 4 --- 2((2));</pre>	<pre>graph TD; 6[6] --- 2((2)); 6 --- 3((3));</pre>	<pre>graph TD; 9[9] --- 3((3)); 9 --- 3((3));</pre>	<pre>graph TD; 10[10] --- 2((2)); 10 --- 5((5));</pre>
<pre>graph TD; 14[14] --- 2((2)); 14 --- 7((7));</pre>	<pre>graph TD; 15[15] --- 3((3)); 15 --- 5((5));</pre>	<pre>graph TD; 21[21] --- 3((3)); 21 --- 7((7));</pre>	<pre>graph TD; 22[22] --- 2((2)); 22 --- 11((11));</pre>
<pre>graph TD; 25[25] --- 5((5)); 25 --- 5((5));</pre>	<pre>graph TD; 26[26] --- 2((2)); 26 --- 13((13));</pre>	<pre>graph TD; 33[33] --- 3((3)); 33 --- 11((11));</pre>	<pre>graph TD; 34[34] --- 2((2)); 34 --- 17((17));</pre>
<pre>graph TD; 35[35] --- 5((5)); 35 --- 7((7));</pre>	<pre>graph TD; 38[38] --- 2((2)); 38 --- 19((19));</pre>	<pre>graph TD; 39[39] --- 3((3)); 39 --- 13((13));</pre>	<pre>graph TD; 46[46] --- 2((2)); 46 --- 23((23));</pre>
<pre>graph TD; 49[49] --- 7((7)); 49 --- 7((7));</pre>	<pre>graph TD; 51[51] --- 3((3)); 51 --- 17((17));</pre>	<pre>graph TD; 55[55] --- 5((5)); 55 --- 11((11));</pre>	<pre>graph TD; 57[57] --- 3((3)); 57 --- 19((19));</pre>
<pre>graph TD; 58[58] --- 2((2)); 58 --- 29((29));</pre>	<pre>graph TD; 62[62] --- 2((2)); 62 --- 31((31));</pre>	<pre>graph TD; 65[65] --- 5((5)); 65 --- 13((13));</pre>	<pre>graph TD; 69[69] --- 3((3)); 69 --- 23((23));</pre>

# Complete Each Factor Tree By Dividing By The Lowest Prime Factor

<pre>graph TD; 74[74] --- 2((2)); 74 --- 37((37));</pre>	<pre>graph TD; 77[77] --- 7((7)); 77 --- 11((11));</pre>	<pre>graph TD; 82[82] --- 2((2)); 82 --- 41((41));</pre>	<pre>graph TD; 85[85] --- 5((5)); 85 --- 17((17));</pre>
<pre>graph TD; 86[86] --- 2((2)); 86 --- 43((43));</pre>	<pre>graph TD; 87[87] --- 3((3)); 87 --- 29((29));</pre>	<pre>graph TD; 91[91] --- 7((7)); 91 --- 13((13));</pre>	<pre>graph TD; 93[93] --- 3((3)); 93 --- 31((31));</pre>
<pre>graph TD; 94[94] --- 2((2)); 94 --- 47((47));</pre>	<pre>graph TD; 95[95] --- 5((5)); 95 --- 19((19));</pre>	<pre>graph TD; 106[106] --- 2((2)); 106 --- 53((53));</pre>	<pre>graph TD; 111[111] --- 3((3)); 111 --- 37((37));</pre>
<pre>graph TD; 115[115] --- 5((5)); 115 --- 23((23));</pre>	<pre>graph TD; 118[118] --- 2((2)); 118 --- 59((59));</pre>	<pre>graph TD; 119[119] --- 7((7)); 119 --- 17((17));</pre>	<pre>graph TD; 121[121] --- 11((11)); 121 --- 11((11));</pre>
<pre>graph TD; 122[122] --- 2((2)); 122 --- 61((61));</pre>	<pre>graph TD; 123[123] --- 3((3)); 123 --- 41((41));</pre>	<pre>graph TD; 129[129] --- 3((3)); 129 --- 43((43));</pre>	<pre>graph TD; 133[133] --- 7((7)); 133 --- 19((19));</pre>
<pre>graph TD; 134[134] --- 2((2)); 134 --- 67((67));</pre>	<pre>graph TD; 141[141] --- 3((3)); 141 --- 47((47));</pre>	<pre>graph TD; 142[142] --- 2((2)); 142 --- 71((71));</pre>	<pre>graph TD; 145[145] --- 5((5)); 145 --- 29((29));</pre>

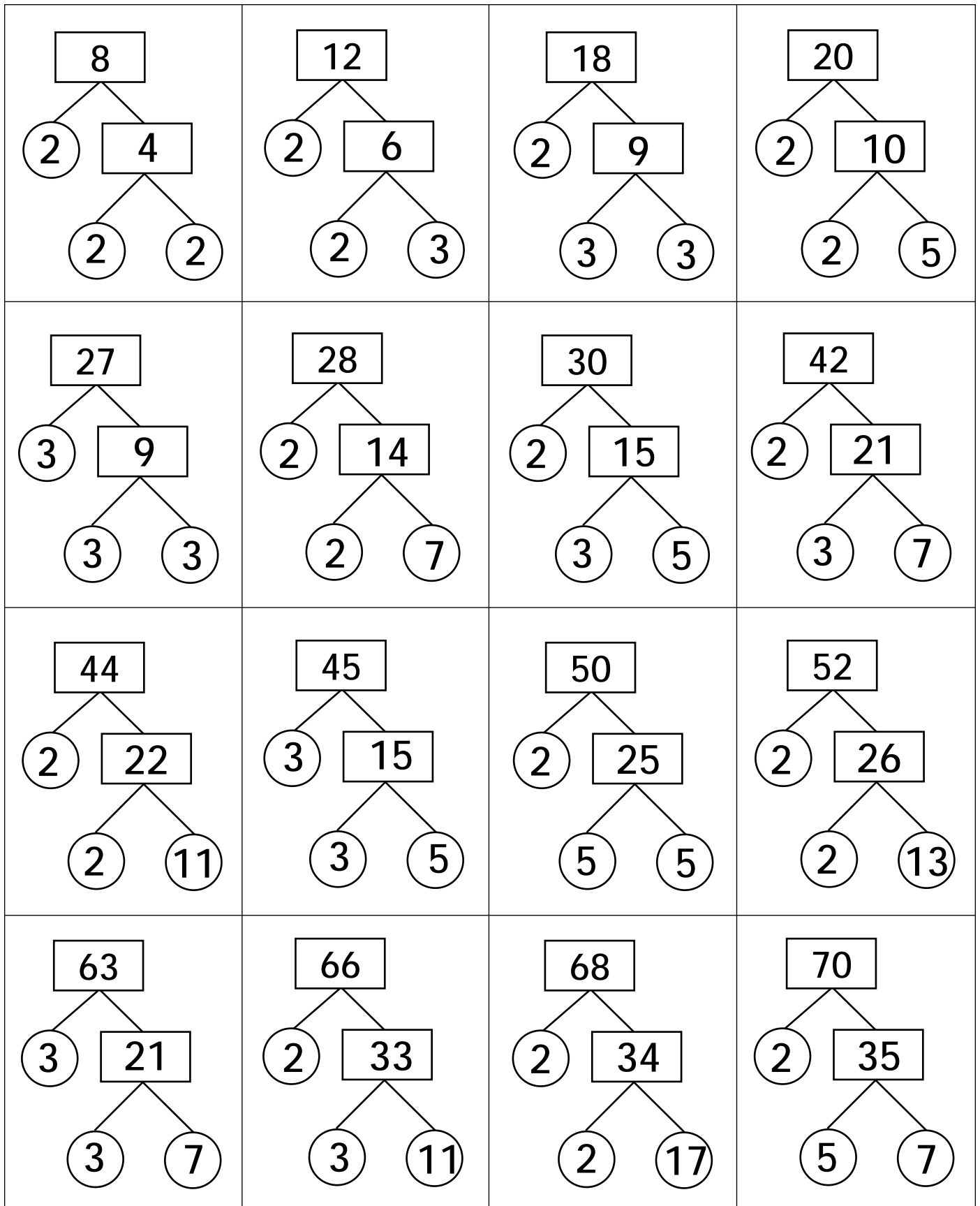
# Complete Each Factor Tree By Dividing By The Lowest Prime Factor

<pre>graph TD; 146[146] --- 2((2)); 146 --- 73((73));</pre>	<pre>graph TD; 155[155] --- 5((5)); 155 --- 31((31));</pre>	<pre>graph TD; 158[158] --- 2((2)); 158 --- 79((79));</pre>	<pre>graph TD; 159[159] --- 3((3)); 159 --- 53((53));</pre>
<pre>graph TD; 161[161] --- 7((7)); 161 --- 23((23));</pre>	<pre>graph TD; 166[166] --- 2((2)); 166 --- 83((83));</pre>	<pre>graph TD; 177[177] --- 3((3)); 177 --- 59((59));</pre>	<pre>graph TD; 178[178] --- 2((2)); 178 --- 89((89));</pre>
<pre>graph TD; 183[183] --- 3((3)); 183 --- 61((61));</pre>	<pre>graph TD; 185[185] --- 5((5)); 185 --- 37((37));</pre>	<pre>graph TD; 194[194] --- 2((2)); 194 --- 97((97));</pre>	<pre>graph TD; 201[201] --- 3((3)); 201 --- 67((67));</pre>
<pre>graph TD; 203[203] --- 7((7)); 203 --- 29((29));</pre>	<pre>graph TD; 205[205] --- 5((5)); 205 --- 41((41));</pre>	<pre>graph TD; 213[213] --- 3((3)); 213 --- 71((71));</pre>	<pre>graph TD; 215[215] --- 5((5)); 215 --- 43((43));</pre>
<pre>graph TD; 217[217] --- 7((7)); 217 --- 31((31));</pre>	<pre>graph TD; 219[219] --- 3((3)); 219 --- 73((73));</pre>	<pre>graph TD; 235[235] --- 5((5)); 235 --- 47((47));</pre>	<pre>graph TD; 237[237] --- 3((3)); 237 --- 79((79));</pre>
<pre>graph TD; 249[249] --- 3((3)); 249 --- 83((83));</pre>	<pre>graph TD; 259[259] --- 7((7)); 259 --- 37((37));</pre>	<pre>graph TD; 265[265] --- 5((5)); 265 --- 53((53));</pre>	<pre>graph TD; 267[267] --- 3((3)); 267 --- 89((89));</pre>

# Complete Each Factor Tree By Dividing By The Lowest Prime Factor

<pre>graph TD; A[287] --- B((7)); A --- C((41));</pre>	<pre>graph TD; A[291] --- B((3)); A --- C((97));</pre>	<pre>graph TD; A[295] --- B((5)); A --- C((59));</pre>	<pre>graph TD; A[301] --- B((7)); A --- C((43));</pre>
<pre>graph TD; A[305] --- B((5)); A --- C((61));</pre>	<pre>graph TD; A[329] --- B((7)); A --- C((47));</pre>	<pre>graph TD; A[335] --- B((5)); A --- C((67));</pre>	<pre>graph TD; A[355] --- B((5)); A --- C((71));</pre>
<pre>graph TD; A[365] --- B((5)); A --- C((73));</pre>	<pre>graph TD; A[371] --- B((7)); A --- C((53));</pre>	<pre>graph TD; A[395] --- B((5)); A --- C((79));</pre>	<pre>graph TD; A[413] --- B((7)); A --- C((59));</pre>
<pre>graph TD; A[415] --- B((5)); A --- C((83));</pre>	<pre>graph TD; A[427] --- B((7)); A --- C((61));</pre>	<pre>graph TD; A[445] --- B((5)); A --- C((89));</pre>	<pre>graph TD; A[469] --- B((7)); A --- C((67));</pre>
<pre>graph TD; A[485] --- B((5)); A --- C((97));</pre>	<pre>graph TD; A[497] --- B((7)); A --- C((71));</pre>	<pre>graph TD; A[511] --- B((7)); A --- C((73));</pre>	<pre>graph TD; A[553] --- B((7)); A --- C((79));</pre>
<pre>graph TD; A[581] --- B((7)); A --- C((83));</pre>	<pre>graph TD; A[623] --- B((7)); A --- C((89));</pre>	<pre>graph TD; A[679] --- B((7)); A --- C((97));</pre>	<pre>graph TD; A[737] --- B((11)); A --- C((67));</pre>

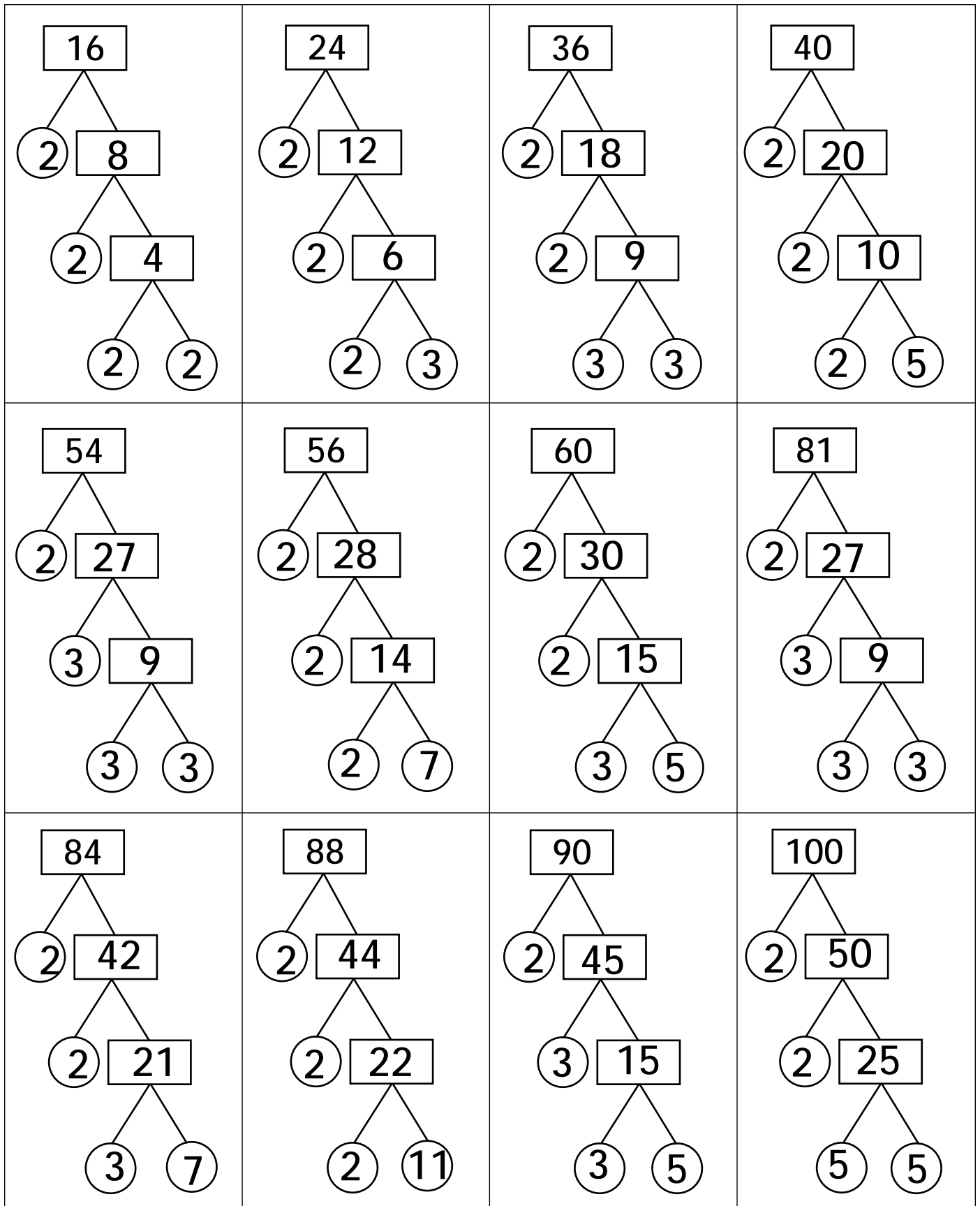
# Complete Each Factor Tree By Dividing By The Lowest Prime Factor



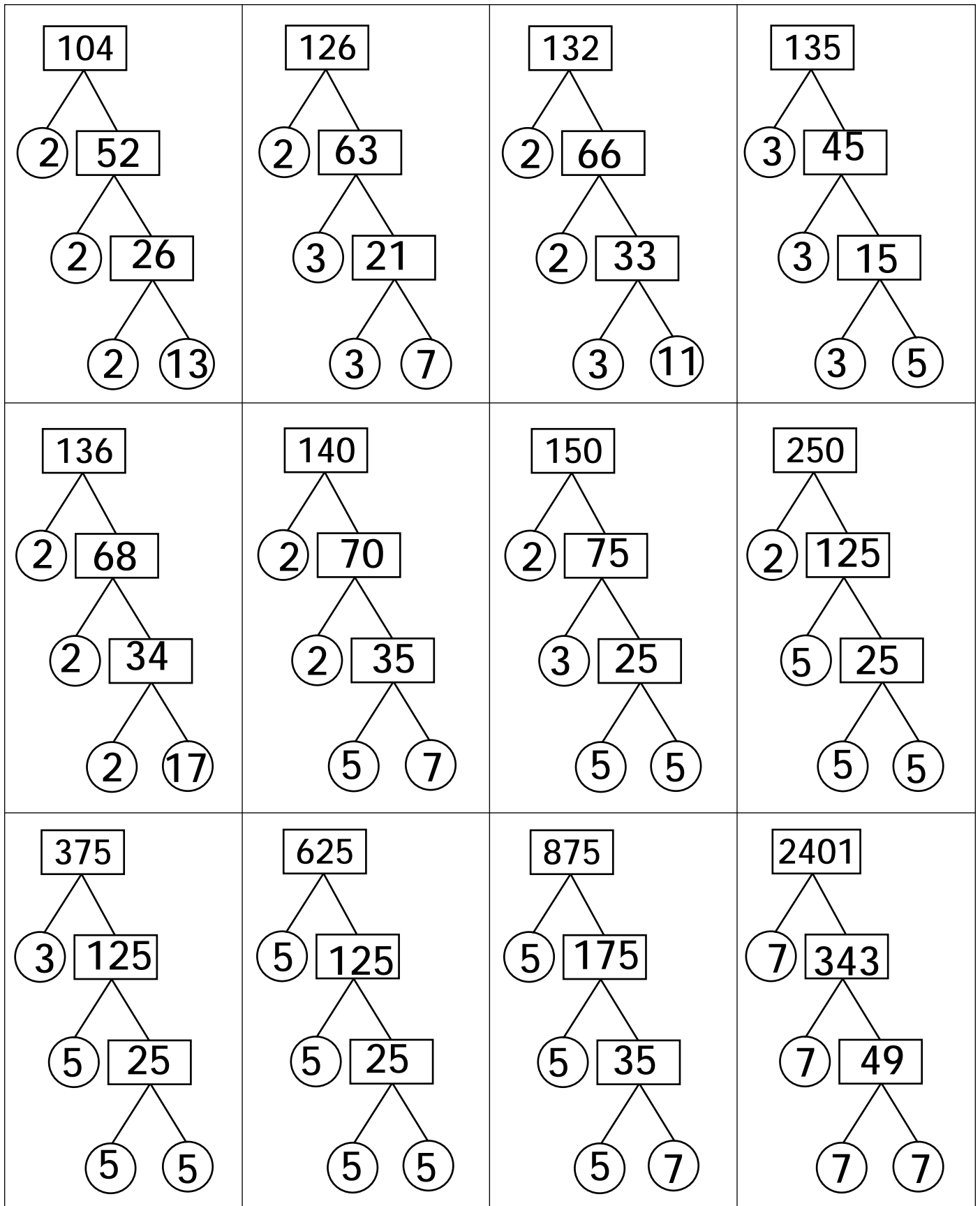
# Complete Each Factor Tree By Dividing By The Lowest Prime Factor

<pre> graph TD     75[75] --- 3((3))     75 --- 25[25]     25 --- 5((5))     25 --- 5((5))           </pre>	<pre> graph TD     76[76] --- 2((2))     76 --- 38[38]     38 --- 2((2))     38 --- 19((19))           </pre>	<pre> graph TD     78[78] --- 2((2))     78 --- 39[39]     39 --- 3((3))     39 --- 13((13))           </pre>	<pre> graph TD     92[92] --- 2((2))     92 --- 46[46]     46 --- 2((2))     46 --- 23((23))           </pre>
<pre> graph TD     98[98] --- 2((2))     98 --- 49[49]     49 --- 7((7))     49 --- 7((7))           </pre>	<pre> graph TD     99[99] --- 3((3))     99 --- 33[33]     33 --- 3((3))     33 --- 11((11))           </pre>	<pre> graph TD     102[102] --- 2((2))     102 --- 51[51]     51 --- 3((3))     51 --- 17((17))           </pre>	<pre> graph TD     105[105] --- 3((3))     105 --- 35[35]     35 --- 5((5))     35 --- 7((7))           </pre>
<pre> graph TD     110[110] --- 2((2))     110 --- 55[55]     55 --- 5((5))     55 --- 11((11))           </pre>	<pre> graph TD     114[114] --- 2((2))     114 --- 57[57]     57 --- 3((3))     57 --- 19((19))           </pre>	<pre> graph TD     116[116] --- 2((2))     116 --- 58[58]     58 --- 2((2))     58 --- 29((29))           </pre>	<pre> graph TD     117[117] --- 3((3))     117 --- 39[39]     39 --- 3((3))     39 --- 13((13))           </pre>
<pre> graph TD     124[124] --- 2((2))     124 --- 62[62]     62 --- 2((2))     62 --- 31((31))           </pre>	<pre> graph TD     125[125] --- 5((5))     125 --- 25[25]     25 --- 5((5))     25 --- 5((5))           </pre>	<pre> graph TD     130[130] --- 2((2))     130 --- 65[65]     65 --- 5((5))     65 --- 13((13))           </pre>	<pre> graph TD     138[138] --- 2((2))     138 --- 69[69]     69 --- 3((3))     69 --- 23((23))           </pre>

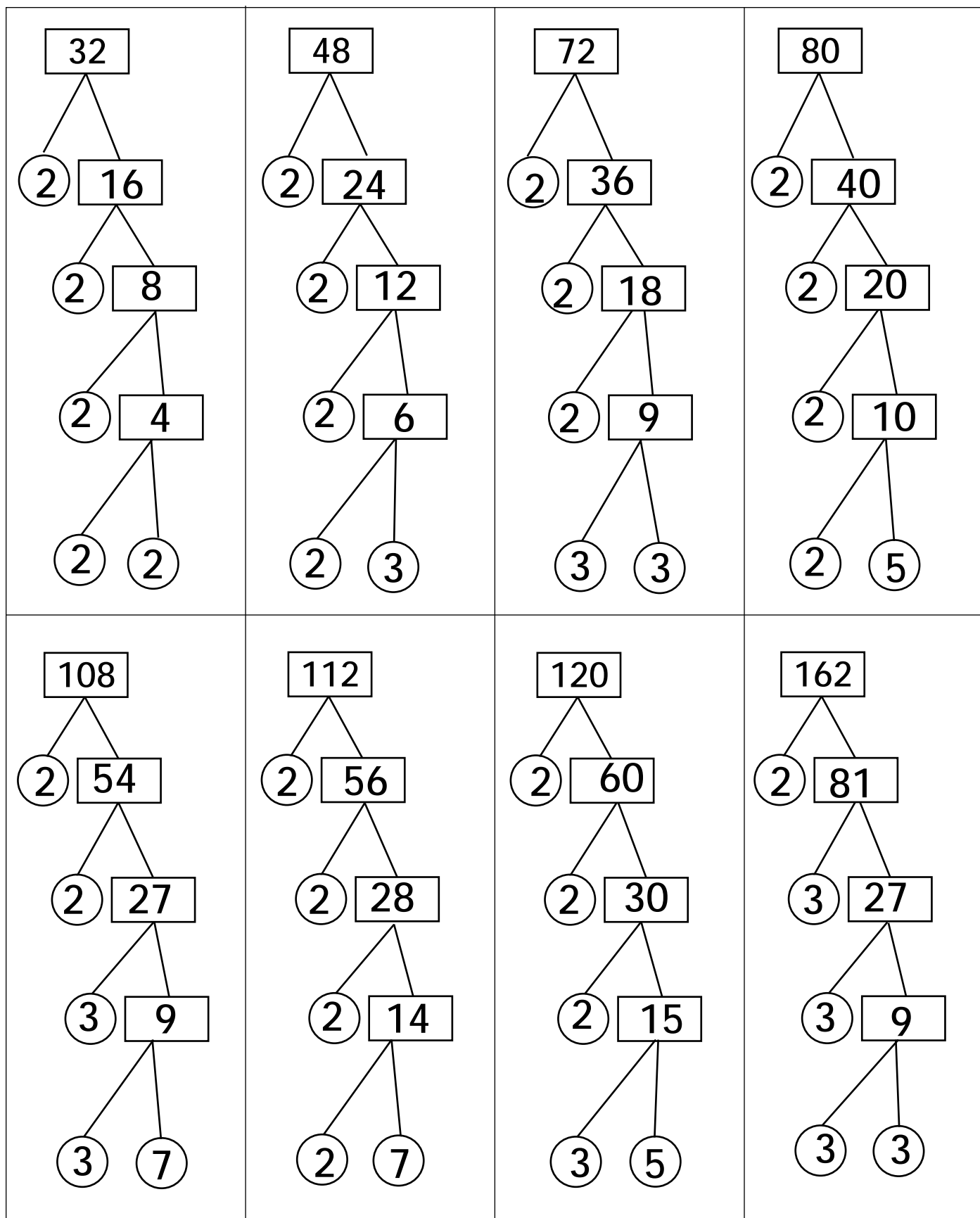
# Complete Each Factor Tree By Dividing By The Lowest Prime Factor



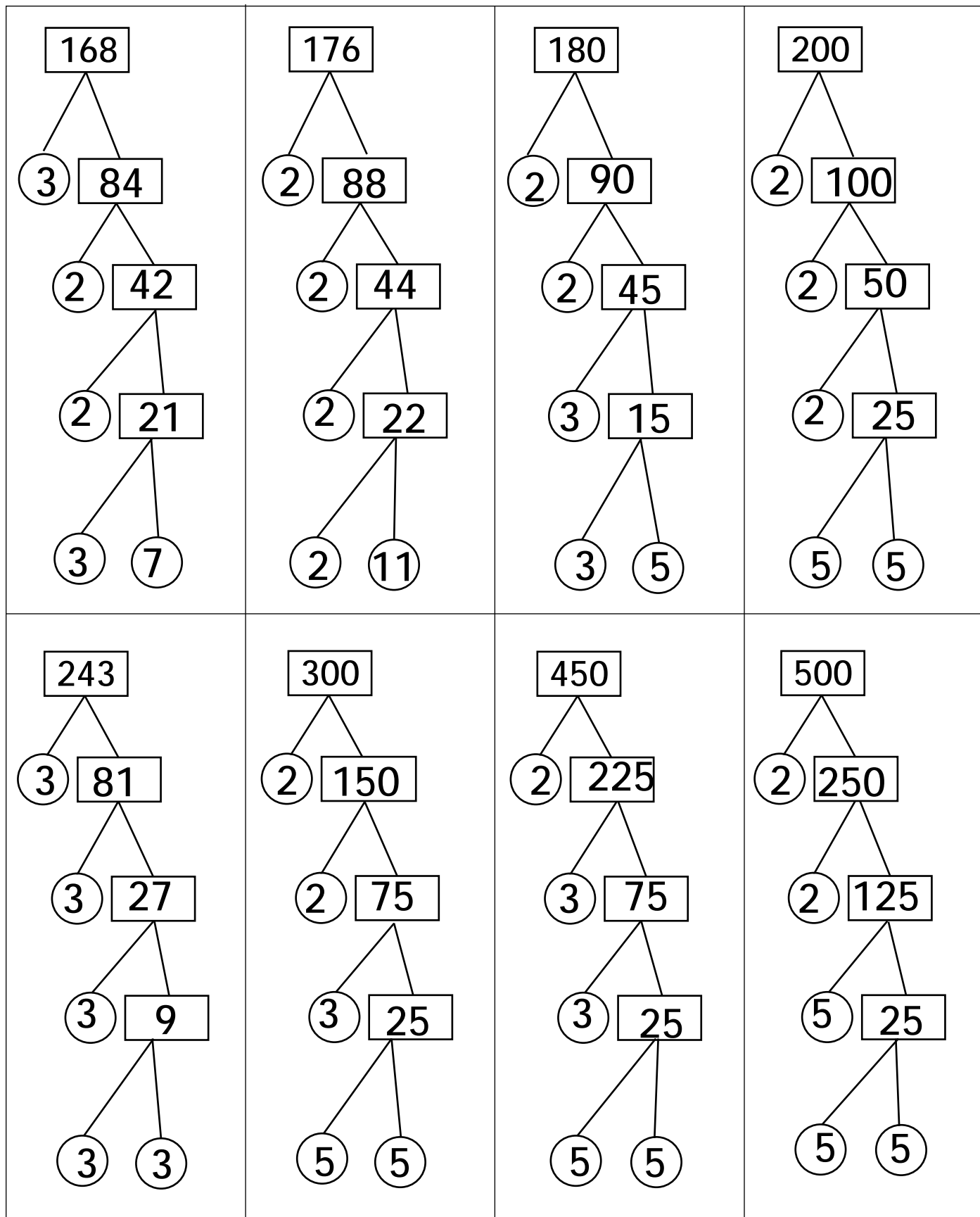
# Complete Each Factor Tree By Dividing By The Lowest Prime Factor



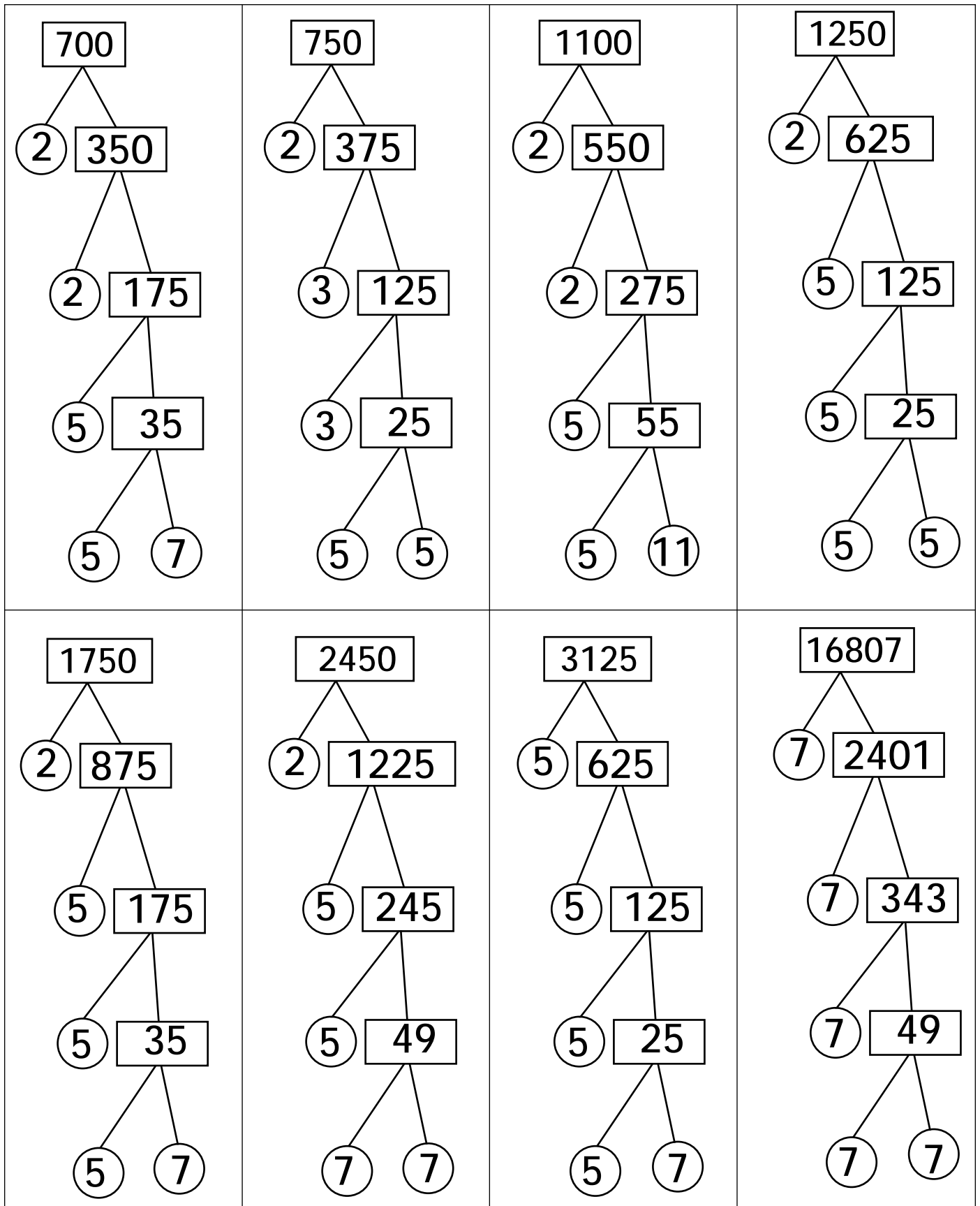
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