

A mixture of juice is made up of cranberry juice and apple juice in a ratio of 4:3.  
 How many cups of each are needed to make 140 cups of juice?  
 Explain your reasoning.

Student 1	<p>80 cups of cranberry juice and 60 cups of apple juice are needed.            I used a tape diagram to solve the problem.</p> <p>cranberry <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>20</td><td>20</td><td>20</td><td>20</td></tr></table> }            apple <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>20</td><td>20</td><td>20</td></tr></table> } 140</p> <p>I made 4 boxes to represent cranberry and 3 boxes to represent apple, since the ratio was 4:3.            The total of all boxes equals 140, and I know that each box equals the same amount. There are 7 boxes total, so I divided 140 by 7 to find the amount in each box.  <math>140 \div 7 = 20</math>            Cranberry: <math>4 \cdot 20 = 80</math>            Apple: <math>3 \cdot 20 = 60</math></p>	20	20	20	20	20	20	20						
20	20	20	20											
20	20	20												
Student 2	<p>80 cups of cranberry juice and 60 cups of apple juice are needed.</p> <p><math>7n = 140</math>; <math>n = 20</math>  <math>4 \cdot 20 = 80</math> and <math>3 \cdot 20 = 60</math></p>													
Student 3	<p>80 cups of cranberry juice and 60 cups of apple juice are needed.</p> <table border="1" style="margin-left: 20px;"> <tbody> <tr> <td>Cranberry</td> <td>4</td> <td>8</td> <td>80</td> </tr> <tr> <td>Apple</td> <td>3</td> <td>6</td> <td>60</td> </tr> <tr> <td>Total</td> <td>7</td> <td>14</td> <td>140</td> </tr> </tbody> </table> <p>I made a table until the total amount reached 140.</p>	Cranberry	4	8	80	Apple	3	6	60	Total	7	14	140	
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Total	7	14	140											