

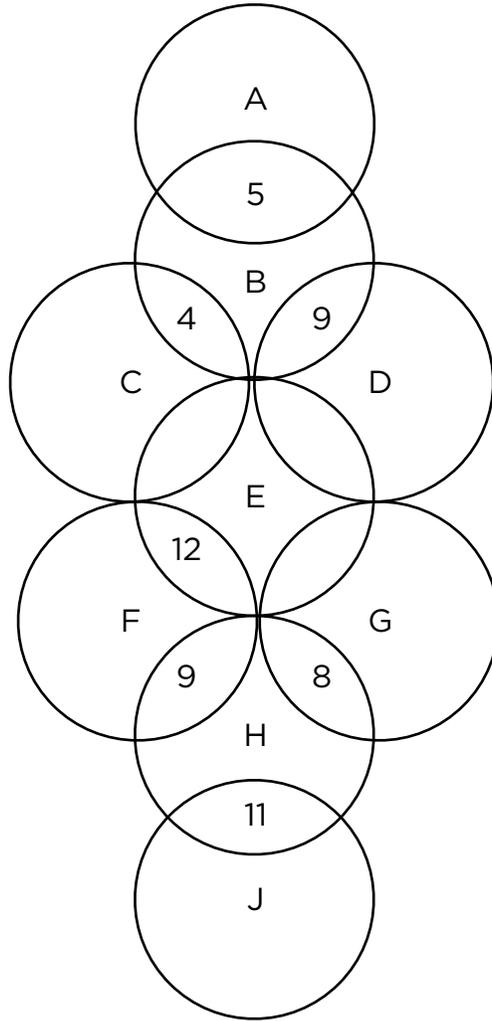


# Diversions

Tuesday, 17 Aug 2010

## Circle Math

The diagram below is formed by 9 overlapping circles. Each circle contains a letter which represents a unique digit from 1 to 9. The numbers in the intersection of the circles is the sum of the letters in the intersecting circles. What is the value of each letter?



## Word Problem

A cake with a square top has icing on the top and the sides. Three people want to share the cake so that each person gets an equal amount of cake and icing. How should the cake be cut?

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# Solutions

to Diversions of Monday, 16 Aug 2010

## Cross Numbers

In this puzzle, the digits from 1 to 9 must be used exactly once. Using the arithmetic signs *in the order they occur* from left to right and from top to bottom (and not the usual order of precedence), the expression in the rows must evaluate to the bold number in the rightmost column, and the expressions in the columns must evaluate to the bold number on the bottom.

The first row of the first puzzle has been done for you.

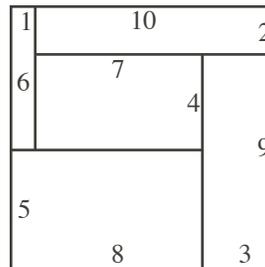
<b>1</b>	+	<b>6</b>	×	<b>2</b>	<b>14</b>
+		+		×	
<b>9</b>	-	<b>5</b>	×	<b>7</b>	<b>28</b>
+		×		+	
<b>3</b>	×	<b>4</b>	-	<b>8</b>	<b>4</b>
<b>13</b>		<b>44</b>		<b>22</b>	

<b>2</b>	+	<b>5</b>	+	<b>8</b>	<b>15</b>
+		÷		÷	
<b>7</b>	-	<b>1</b>	×	<b>4</b>	<b>24</b>
×		+		×	
<b>3</b>	+	<b>6</b>	-	<b>9</b>	<b>0</b>
<b>27</b>		<b>11</b>		<b>18</b>	

## Word Problem

Form a square from five rectangles which do not overlap or leave any holes, and whose side lengths use every integer from 1 to 10.

*Solution:* Here's one solution.



Challenge: how many solutions are there?

