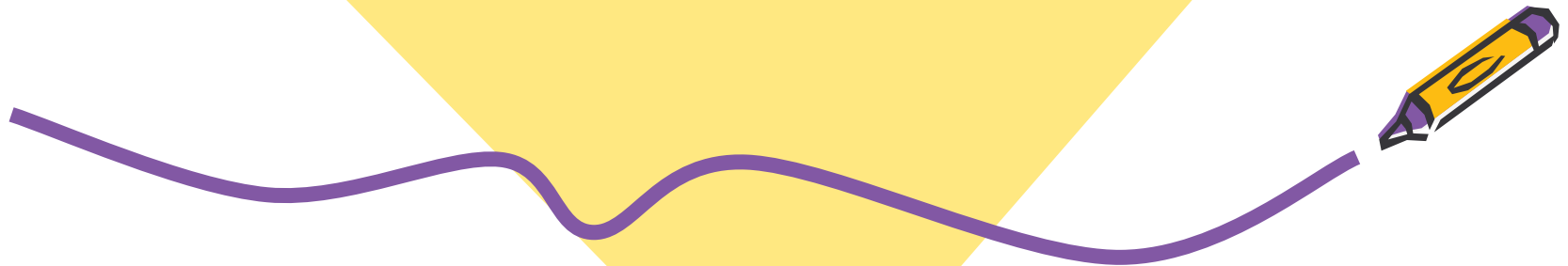




# Mathemagic

Paul Swan



# Mathemagic

- Combines the beauty of mathematical structure with the entertainment value of a trick

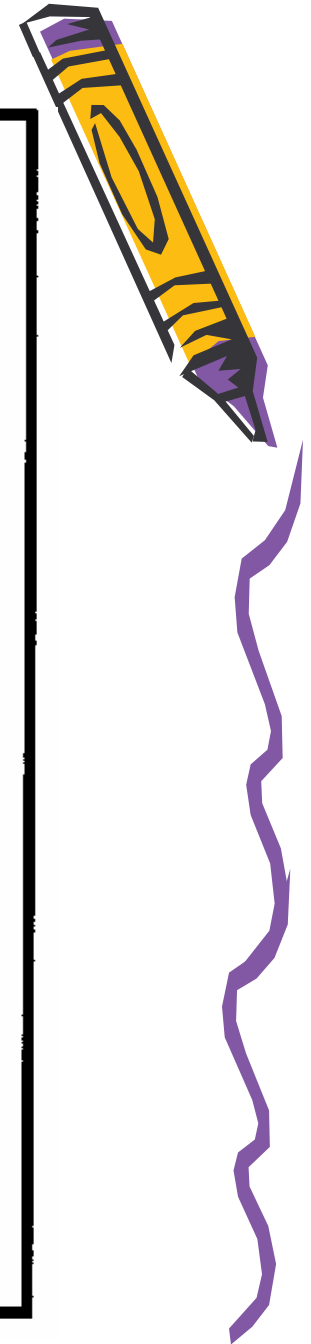


**Choose a  
number  
between**

**1 and 63.**

**Tell me if it  
appears on this  
chart.**

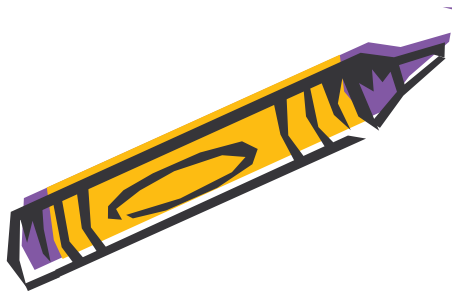
1	23	45
3	25	47
5	27	49
7	29	51
9	31	53
11	33	55
13	35	57
15	37	59
17	39	61
19	41	63
21	43	





2	23	46
3	26	47
6	27	50
7	30	51
10	31	54
11	34	55
14	35	58
15	38	59
18	39	62
19	42	63
22	43	





4	23	46
5	28	47
6	29	52
7	30	53
12	31	54
13	36	55
14	37	60
15	38	61
20	39	62
21	44	63
22	45	





8	27	46
9	28	47
10	29	56
11	30	57
12	31	58
13	40	59
14	41	60
15	42	61
24	43	62
25	44	63
26	45	





16	27	54
17	28	55
18	29	56
19	30	57
20	31	58
21	48	59
22	49	60
23	50	61
24	51	62
25	52	63
26	53	





32	43	54
33	44	55
34	45	56
35	46	57
36	47	58
37	48	59
38	49	60
39	50	61
40	51	62
41	52	63
42	53	





4	23	46
5	28	47
6	29	52
7	30	53
12	31	54
13	36	55
14	37	60
15	38	61
20	39	62
21	44	63
22	45	

32	43	54
33	44	55
34	45	56
35	46	57
36	47	58
37	48	59
38	49	60
39	50	61
40	51	62
41	52	63
42	53	

2	23	46
3	26	47
6	27	50
7	30	51
10	31	54
11	34	55
14	35	58
15	38	59
18	39	62
19	42	63
22	43	

16	27	54
17	28	55
18	29	56
19	30	57
20	31	58
21	48	59
22	49	60
23	50	61
24	51	62
25	52	63
26	53	

1	23	45
3	25	47
5	27	49
7	29	51
9	31	53
11	33	55
13	35	57
15	37	59
17	39	61
19	41	63
21	43	

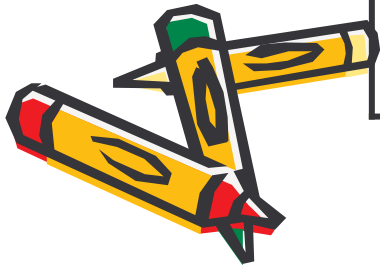
8	27	46
9	28	47
10	29	56
11	30	57
12	31	58
13	40	59
14	41	60
15	42	61
24	43	62
25	44	63
26	45	



# Tricky Table



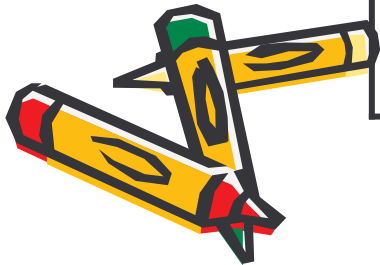
<b>9</b>	<b>7</b>	<b>5</b>	<b>11</b>
<b>7</b>	<b>5</b>	<b>3</b>	<b>9</b>
<b>13</b>	<b>11</b>	<b>9</b>	<b>15</b>
<b>8</b>	<b>6</b>	<b>4</b>	<b>10</b>



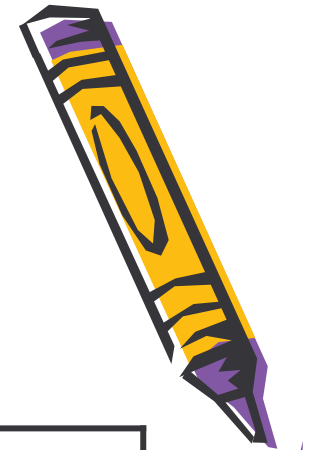
# Tricky Table

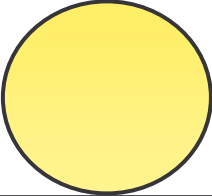
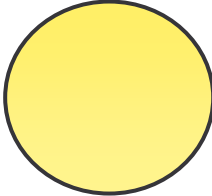


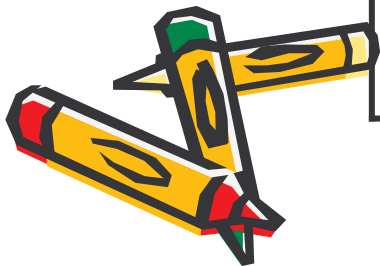
9	7	5	<del>11</del>
7	5	3	<del>9</del>
13	11	9	<del>15</del>
<del>8</del>	<del>6</del>	<del>4</del>	●



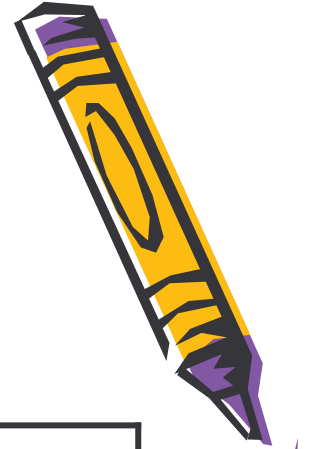
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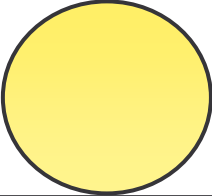
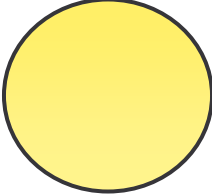
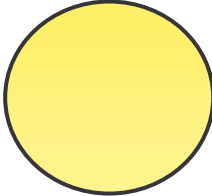


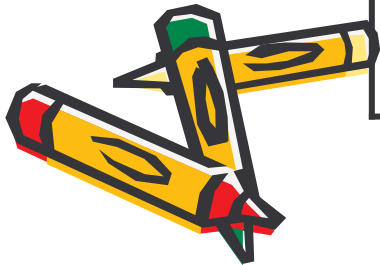
	<del>7</del>	<del>5</del>	<del>11</del>
<del>7</del>	5	3	<del>9</del>
<del>13</del>	11	9	<del>15</del>
<del>8</del>	<del>6</del>	<del>4</del>	



# Tricky Table

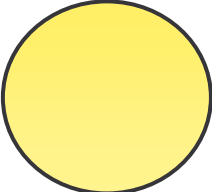
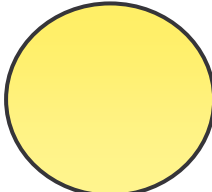
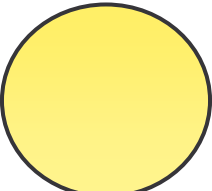
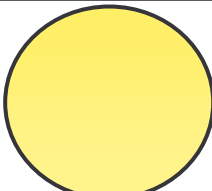


	<del>7</del>	<del>5</del>	<del>11</del>
<del>7</del>	<del>5</del>	3	<del>9</del>
<del>13</del>		<del>9</del>	<del>15</del>
<del>8</del>	<del>6</del>	<del>4</del>	



# Tricky Table

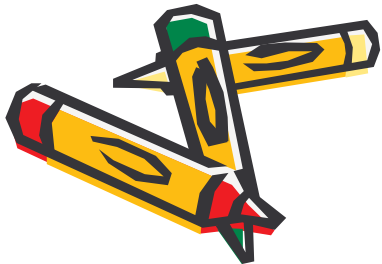
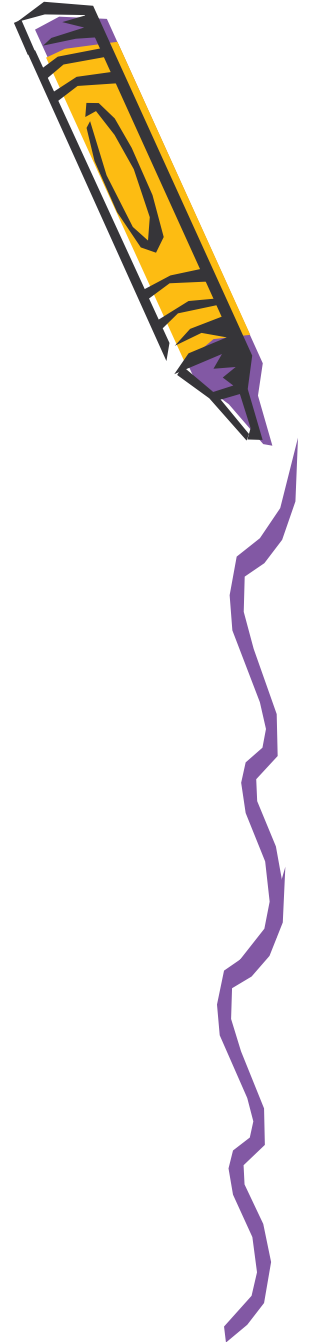


	<del>7</del>	<del>5</del>	<del>11</del>
<del>7</del>	<del>5</del>		<del>9</del>
<del>13</del>		<del>9</del>	<del>15</del>
<del>8</del>	<del>6</del>	<del>4</del>	



# Tricky Table

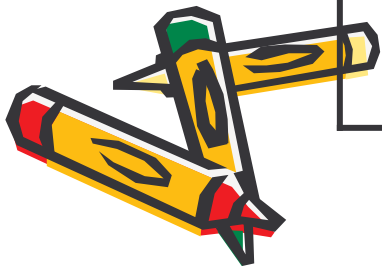
- Add the four circled numbers.
- $9 + 11 + 3 + 10 = 33$
- Check your total against that of your neighbour



# How to create a Tricky Table

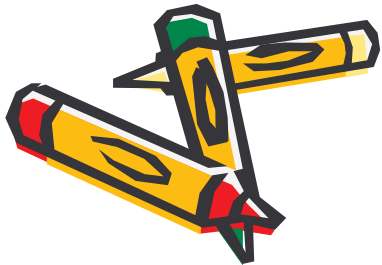
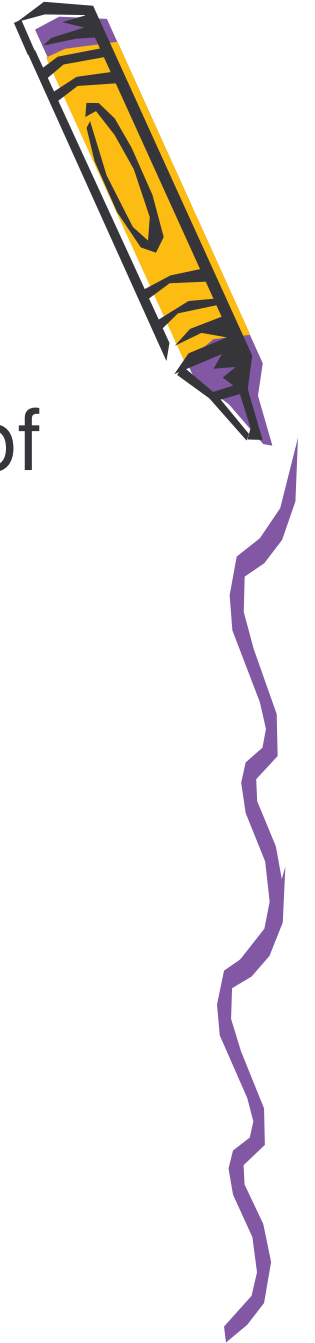


<b>+</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>7</b>
<b>4</b>	9	7	5	11
<b>2</b>	7	5	3	9
<b>8</b>	13	11	9	15
<b>3</b>	8	6	4	10

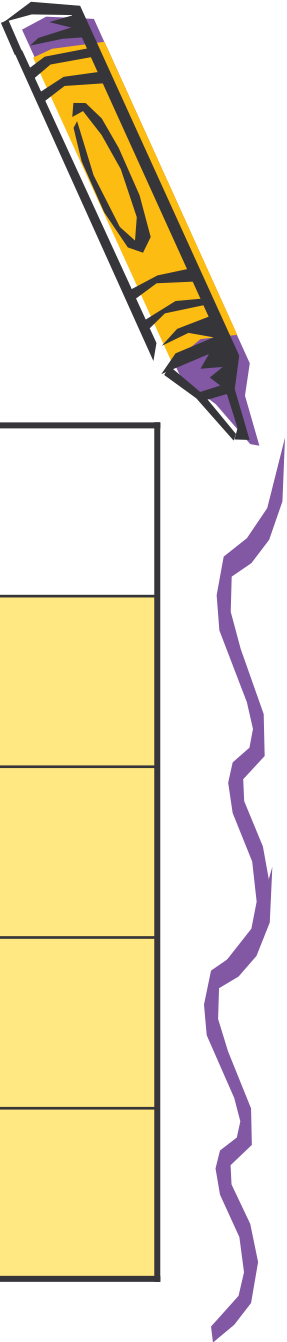


# Finding the Magic Number

- Add all the numbers on the outside of the table
- $5 + 3 + 1 + 7 + 4 + 2 + 8 + 3 = 33$



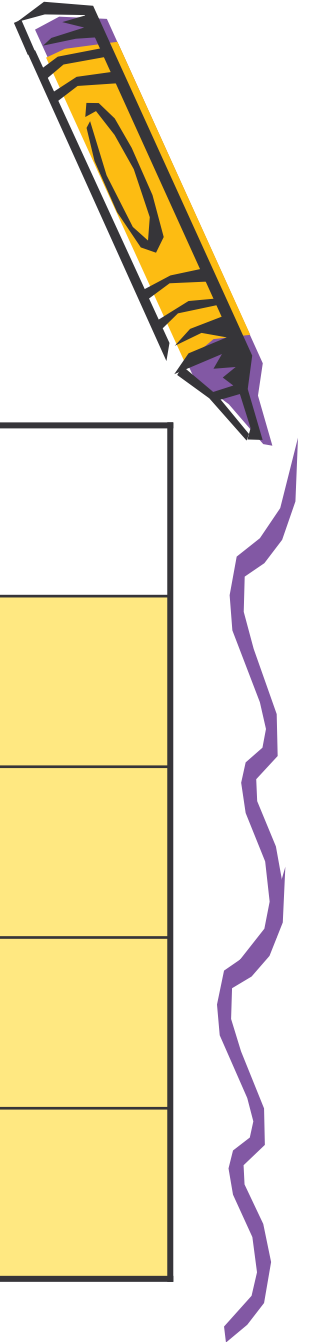
# Create a Tricky Table



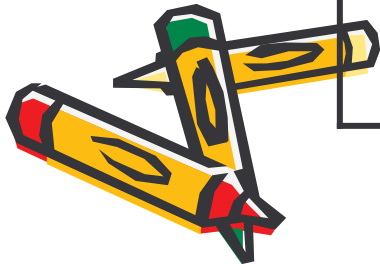
+				



# Try a Multiplication Table

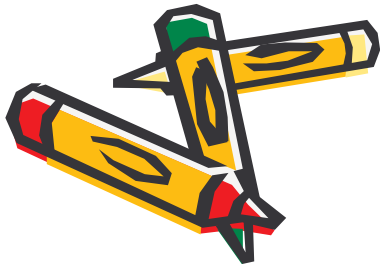
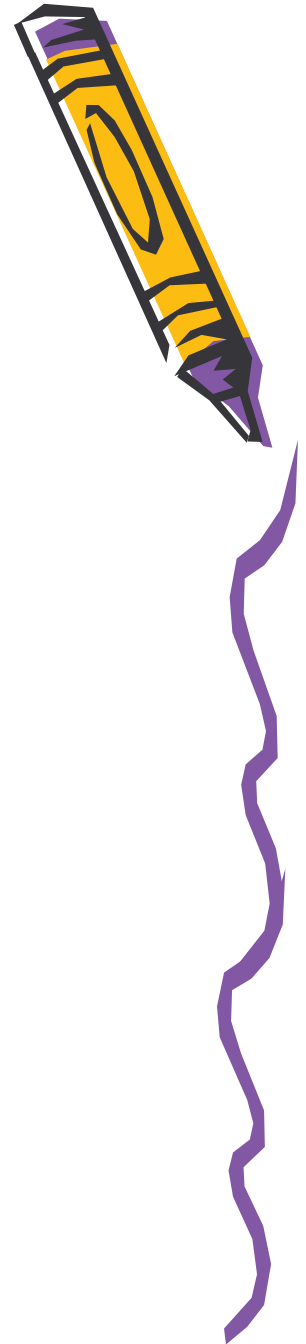


<b>x</b>				



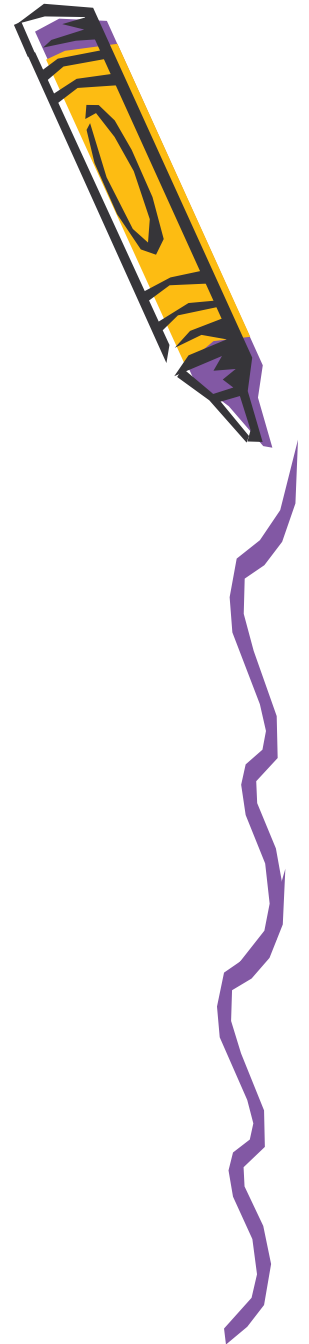
# Think of a Number

- Choose a number
  - Double it
  - Add ten
  - Treble it (3 x)
  - Subtract 30
  - Divide by six
- 6
  - 12
  - 22
  - 66
  - 36
  - #



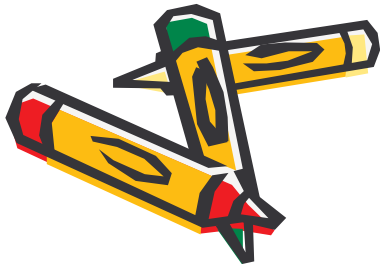
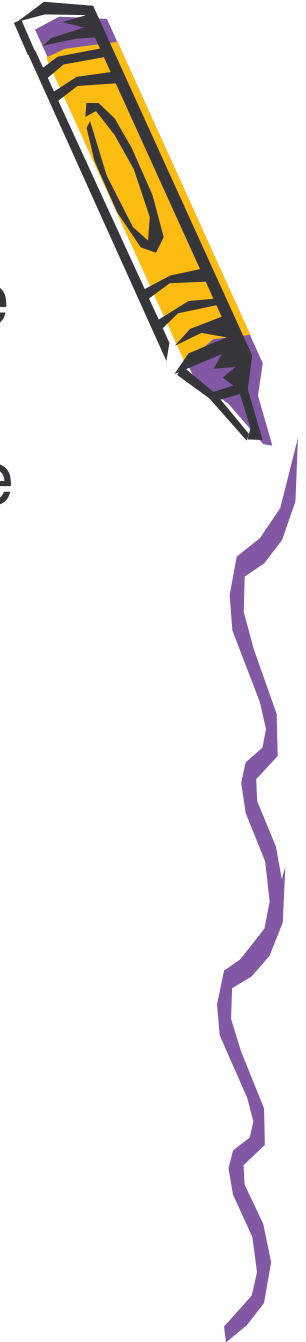
# Think of a Number II

- Choose a number
  - Add 20
  - Double it
  - Subtract 10
  - Halve it
  - Subtract the number you started with
- 6
  - 26
  - 52
  - 42
  - 21
  - #



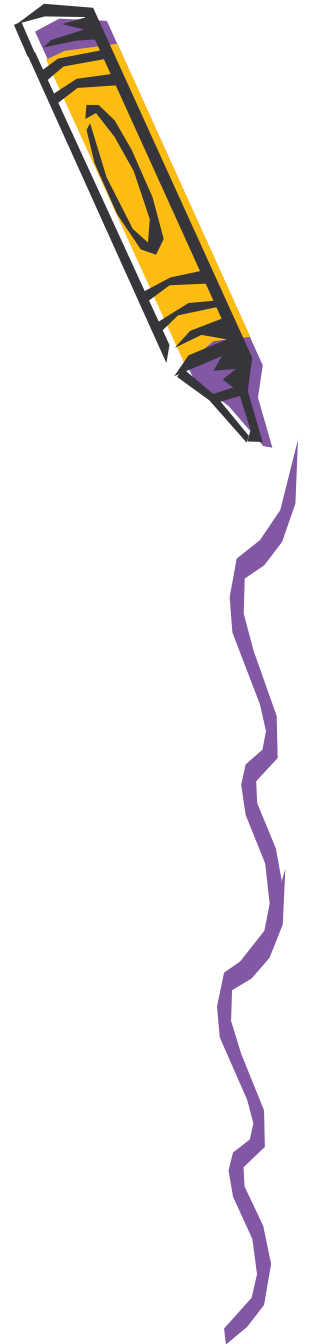
# Domino Trick

- Ask your partner to choose a domino piece (without you seeing)
- Multiply one of the numbers shown on the domino by 5
- Add 6 to the result
- Double your answer
- Add the number on the other half of the domino
- Ask your partner to tell you his/her final number



# Working out the original numbers

- Subtract 12 to find the two numbers that were on the original domino
- Could use two dice



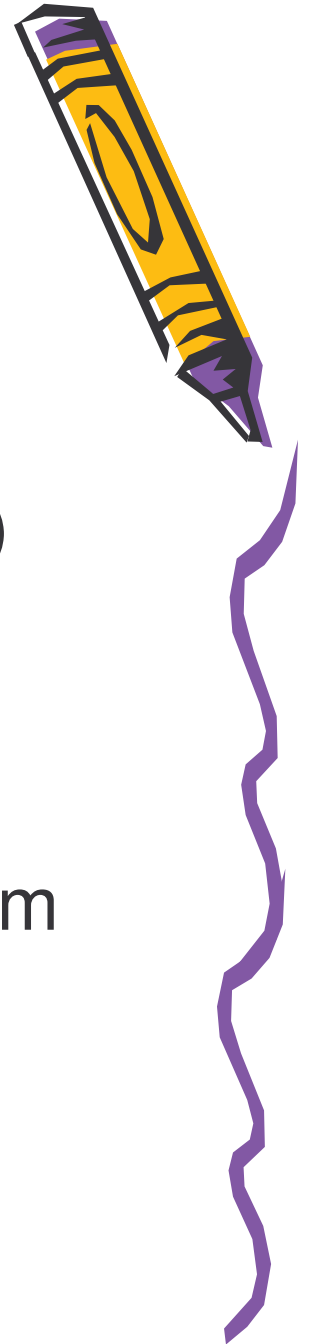
# Thrice Dice

- Roll three dice
- Stack on top of each other
- Magician reveals the total
- Add the numbers showing on the five faces that are touching.



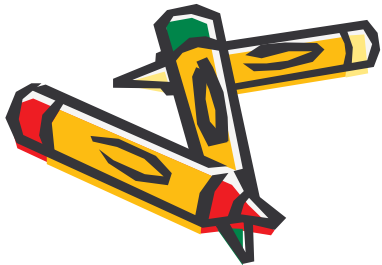
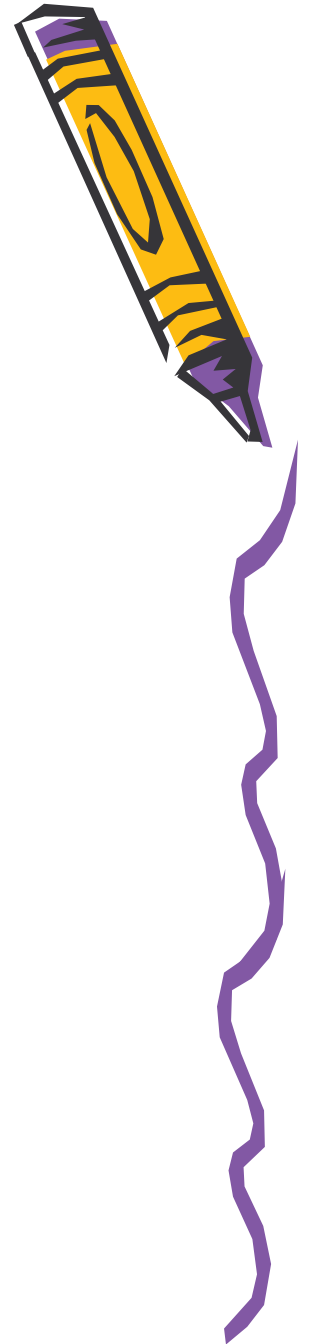
# Double Dice

- Throw two dice (one dot, one number)
- Multiply the two top numbers (write down)
- Multiply the two bottom numbers
- Multiply the top of the number die by the bottom of the dot die
- Multiply the top of the dot die by the bottom of the number die
- Add the four numbers



The answer

49



# For more math magic see...

- Swan, P. (2002). *Motivational maths: Lesson starters and investigations*. Perth: R.I.C. Publications.
- [www.ricgroup.com.au](http://www.ricgroup.com.au)
- [www.otrnet.com.au](http://www.otrnet.com.au)

