

Nom :

*garam 1-2*

Date :

N°1

$\begin{array}{r} -6 = \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 5 + 4 = \\ + \\ \hline \end{array}$
$\begin{array}{r} + \\ \hline 1 \end{array}$	$\begin{array}{r} -0 = \\ \hline 1 \end{array}$
$\begin{array}{r} - \\ \hline = 0 \end{array}$	$\begin{array}{r} + \\ \hline = \end{array}$

Two 3x3 grids illustrating the steps to solve a 3x3 magic square. The left grid shows the first row as 3, 1, 8 and the second row as 2, 4, 9. The right grid shows the first row as 4, 2, 9 and the second row as 3, 1, 8.

N°2

$\begin{array}{ c c c } \hline & +1 = & \\ \hline +8 & & + \\ \hline \equiv & & \equiv \\ 1 & & 1 \\ \hline & + & = 1 \\ \hline \end{array}$	$\begin{array}{ c c c } \hline & +3 = & \\ \hline + & & \times 2 \\ \hline \equiv & & \equiv \\ 1 & & \\ \hline 1 + & & = \\ \hline \end{array}$
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Two 3x3 magic squares are shown. The left square has numbers 4, 1, 8 in the first column, 2, 9, 3 in the second, and 6, 5, 7 in the third. The right square has numbers 6, 1, 4 in the first column, 2, 9, 3 in the second, and 8, 5, 7 in the third. Both squares have a magic sum of 15.

N°3

$\begin{array}{r} + 0 = \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} - 4 = \\ \end{array}$
$\begin{array}{r} + \\ \hline \end{array}$	$\begin{array}{r} + \\ \hline \end{array}$
$+ 2 =$	$+ 5 =$
$\begin{array}{r} \hline 1 \\ \hline \end{array}$	$\begin{array}{r} \hline 1 \\ \hline \end{array}$
$- = 2$	$- = 0$

	<u>3</u>				<u>4</u>	
-	=	5	+ 4 =	<u>2</u>	+	= 2
<u>x</u>		<u>+</u>		<u>x</u>		<u>x</u>
<u>2</u>		<u>1</u>				<u>8</u>
- 6 =				-		=

N°4

$\begin{array}{r} + 1 = \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} + 1 = \\ + \\ \hline \end{array}$
$\begin{array}{r} + 5 + 4 = \\ \hline 1 \end{array}$	$\begin{array}{r} + \\ \hline 1 \end{array}$
$\begin{array}{r} - = 4 \\ + \end{array}$	$\begin{array}{r} 7 + = \end{array}$

$\begin{array}{r} \times \\ 2 \\ \hline \end{array}$	$\begin{array}{r} - \\ 1 \\ \hline \end{array}$	$\begin{array}{r} + \\ 1 \\ \hline \end{array}$	$\begin{array}{r} + \\ 1 \\ \hline \end{array}$
$\begin{array}{r} - \\ 3 \\ + \\ \hline \end{array}$	$\begin{array}{r} - \\ 2 \\ = \\ \hline \end{array}$	$\begin{array}{r} + \\ 2 \\ \times \\ \hline \end{array}$	$\begin{array}{r} + \\ 1 \\ \hline \end{array}$
$\begin{array}{r} - \\ 1 \\ = \\ \hline \end{array}$	$\begin{array}{r} - \\ 1 \\ = \\ \hline \end{array}$	$\begin{array}{r} - \\ 1 \\ = \\ \hline \end{array}$	$\begin{array}{r} - \\ 1 \\ = \\ \hline \end{array}$

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N°5

$\times$ <u>3</u>	$+ 3 =$	$+$	$- 4 =$	$\times$ <u>3</u>	$+ 0 =$	$+$ <u>6</u>
		<u>1</u>				<u>1</u>
$+$	$= 4$		$-$	$= 5$		
	<u>1</u>			<u>1</u>		
$+$	$= 3$	$\times$	$- 2 =$	$9$	$+$	$\times$ <u>3</u>
<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>
$+ 1 =$		$+ 7 =$				

N°6

$+$ <u>5</u>	$- 0 =$	$+$	$- 1 =$	$+$	$+ 4 =$	$\times$ <u>3</u>
<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>
$+$	$= 5$		$1 -$	$=$		
	<u>3</u>			<u>7</u>		
$-$	$= 3$	$\times$	$- 4 =$	$\times$ <u>3</u>	$-$	$= 2$
<u>6</u>	<u>1</u>	<u>1</u>		<u>1</u>		<u>1</u>
$+ 1 =$		$- 6 =$				

N°7

$\times$ <u>3</u>	$- 7 =$	$+$	$+ 0 =$	$+$ <u>9</u>	$+ 2 =$	$\times$ <u>3</u>
		<u>1</u>		<u>1</u>		<u>1</u>
$-$	$= 0$		$1 +$	$=$		
	<u>1</u>			<u>1</u>		
$-$	$= 1$	$\times$	$- 2 =$	$\times$	$-$	$= 3$
<u>3</u>	<u>1</u>	<u>1</u>		<u>6</u>		<u>1</u>
$- 8 =$		$+$	$=$			

N°8

$+$ <u>8</u>	$+ 1 =$	$+$	$+ 2 =$	$+$	$- 1 =$	$\times$ <u>3</u>
<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>
$+$	$= 4$		$8 -$	$=$		
	<u>2</u>			<u>1</u>		
$+$	$= 6$	$+$	$+ 1 =$	$+$	$-$	$= 3$
<u>3</u>	<u>1</u>	<u>1</u>		<u>9</u>		<u>1</u>
$+ 1 =$		$+ 4 =$				

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N°9

$+$	$= 3$	$- 2 =$
$\times$	$+ 1 =$	$+$
$\frac{8}{1}$	$\frac{1}{1}$	$\frac{7}{1}$
$+$	$=$	$3 - =$
$-$	$\frac{2}{1}$	$+$
$- 2 = 5$	$3 + =$	$+$
$\times$	$- 1 =$	$\times$
$\frac{3}{1}$	$\frac{1}{1}$	$\frac{4}{1}$
$+$	$=$	$+ 0 =$
$+ 2 =$		

N°10

$- 6 = 3$	$+ 0 =$
$\times$	$+$
$\frac{3}{1}$	$\frac{8}{1}$
$- 1 =$	$3 + 0 =$
$+$	$+$
$+$	$\frac{4}{1}$
$- = 3$	$9 - =$
$+$	$+$
$\frac{1}{1}$	$\frac{1}{1}$
$+ 5 =$	$\times$
$+ 2 =$	$\frac{3}{1}$
	$- 4 =$

N°11

$+ 1 =$	$- 5 =$
$+$	$\times$
$\frac{9}{1}$	$\frac{9}{1}$
$- 4 =$	$- = 2$
$- 1 = 0$	$+$
$\frac{0}{1}$	$\frac{3}{1}$
$+$	$3 + =$
$+$	$+$
$\frac{1}{1}$	$\frac{1}{1}$
$- 0 =$	$\times$
$+ 1 =$	$\frac{3}{1}$
	$+ 4 =$

N°12

$+ 4 =$	$+ 5 =$
$+$	$+$
$\frac{7}{1}$	$\frac{3}{1}$
$+ 5 =$	$0 + =$
$+$	$+$
$= 3$	$-$
$+$	$\frac{4}{1}$
$- 3 = 3$	$- =$
$\times$	$+$
$\frac{3}{1}$	$\frac{1}{1}$
$+ 1 =$	$+$
$+ =$	$\frac{9}{1}$
	$5 - 2 =$

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N°13

$-4=$	$8-3=$
$+ \quad +$	$+ \quad \times$
$\underline{1} \quad \underline{1}$	$\underline{1} \quad \underline{3}$
$+2=$	$+2=$
$- \quad =1$	$- \quad =$
$+4=$	$+0=$
$+ \quad =9$	$3+ \quad =$
$\underline{9} \quad \underline{3}$	$\underline{3} \quad \underline{6}$
$+1=$	$+1=$
$+4=$	$-1=$

N°14

$+3=$	$-6=3$
$\times \quad +$	$\times \quad +$
$\underline{3} \quad \underline{1}$	$\underline{1} \quad \underline{7}$
$-3=$	$-3=$
$- \quad =6$	$3- \quad =$
$+3=$	$-2=$
$- \quad =3$	$6- \quad =$
$\underline{1} \quad \underline{3}$	$\underline{1} \quad \underline{3}$
$-5=$	$-5=$
$+2=$	$+8=$

N°15

$-6=3$	$+1=$
$\times \quad +$	$\times \quad +$
$\underline{3} \quad \underline{6}$	$\underline{3} \quad \underline{3}$
$+0=$	$+0=$
$+ \quad =$	$1+ \quad =$
$+4=$	$-4=$
$- \quad =3$	$9- \quad =$
$\underline{1} \quad \underline{3}$	$\underline{1} \quad \underline{3}$
$+2=$	$+2=$
$+1=$	$+1=$

N°16

$+1=$	$-6=$
$\times \quad +$	$\times \quad +$
$\underline{3} \quad \underline{1}$	$\underline{3} \quad \underline{7}$
$+4=$	$+4=$
$- \quad =1$	$- \quad =0$
$-3=$	$-6=$
$+ \quad =9$	$3-1=$
$\underline{3} \quad \underline{1}$	$\underline{3} \quad \underline{1}$
$+4=$	$+4=$
$-5=$	$-4=$

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N°17

$\begin{array}{r} -3 = \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} +1 = \\ + \\ \hline \end{array}$
$\begin{array}{r} + \\ \hline 1 \end{array}$	$\begin{array}{r} + \\ \hline 1 \end{array}$
$\begin{array}{r} +1 = \\ \hline \end{array}$	$\begin{array}{r} +4 \\ \hline 1 \end{array}$
$\begin{array}{r} - \\ \hline \end{array} = 0$	$5 - \begin{array}{r} \hline \end{array} =$

$\begin{array}{r} 9 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$
$8 - 6 =$	$4 - 6 =$

N°18

$\begin{array}{r} + 5 = \\ + \quad + \\ \hline 1 \end{array}$	$\begin{array}{r} 6 - 2 = \\ + \quad \times \\ \hline 1 \end{array}$
$\begin{array}{r} + 1 = \\ + \quad + \\ \hline 1 \end{array}$	$\begin{array}{r} 4 = \\ \times \quad \times \\ \hline 1 \end{array}$
$\begin{array}{r} - = 2 \\ - \quad + \\ \hline 1 \end{array}$	$\begin{array}{r} 1 + = \\ + \quad - \\ \hline 1 \end{array}$

$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ + \\ \hline \end{array}$
$+ 0 =$	$- 3 =$

N°19

$\begin{array}{r} - 0 = \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} - 3 = \\ + \\ \hline \end{array}$
$\begin{array}{r} + \\ \hline 1 \end{array}$	$\begin{array}{r} + \\ \hline 6 \\ \hline 1 \end{array}$
$- 2 =$	$3 - =$
$- = 5$	$+ =$

$\begin{array}{r} 1 + \underline{\quad} = \\ \underline{\quad} + \underline{\quad} = \times \\ \underline{\quad} = 1 \end{array}$	$\begin{array}{r} 7 - \underline{\quad} = \\ \underline{\quad} \times \underline{\quad} = + \\ \underline{\quad} = 8 \end{array}$
$+ 0 = 4$	$+ 8 = 1$
$+ 8 =$	$- 7 =$

N°20

$\begin{array}{r} - 0 = \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} - 3 = \\ + \\ \hline \end{array}$
$\begin{array}{r} + \\ - 2 = \\ \hline \end{array}$	$\begin{array}{r} + \\ - 6 = \\ \hline \end{array}$
$\begin{array}{r} \hline 1 \end{array}$	$\begin{array}{r} \hline 1 \end{array}$
$\begin{array}{r} - \\ = 5 \end{array}$	$\begin{array}{r} 3 - \\ = \end{array}$

$\begin{array}{r} 1 + \underline{\quad} = \underline{\quad} \\ + \quad \times \\ \hline 1 \end{array}$	$\begin{array}{r} 7 - \underline{\quad} = \underline{\quad} \\ \times \\ \hline 4 \end{array}$
$+ 0 = \underline{\quad}$	$+ 8 = \underline{\quad}$
$+ 8 = \underline{\quad}$	$- 7 = \underline{\quad}$



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## Règles

- 1 Le Garam est un jeu de logique mathématique à base d'opérations simples.
- 2 Remplissez chaque case avec un seul chiffre de sorte que chaque ligne et chaque colonne forment une opération correcte.
- 3 Le résultat d'une opération verticale est un nombre à deux chiffres si deux cases suivent le symbole égal.
- 4 Exemple : ordre de réalisation possible : (1) (2) (3) ...

$\begin{matrix} (8) \\ 1 \end{matrix} + 1 = \begin{matrix} (6) \\ 2 \end{matrix}$	$\begin{matrix} (2) \\ 6 \end{matrix} - 2 = \begin{matrix} (3) \\ 4 \end{matrix}$		
$\begin{matrix} (9) \\ 9 \end{matrix} \times \begin{matrix} (5) \\ 7 \end{matrix} - 3 = \begin{matrix} (1) \\ 6 \end{matrix}$	$\begin{matrix} (4) \\ 2 \end{matrix} \times \begin{matrix} (18) \\ 0 \end{matrix} = \begin{matrix} (23) \\ 9 \end{matrix}$		
$\begin{matrix} (13) \\ 1 \end{matrix} \times \begin{matrix} (14) \\ 0 \end{matrix} + 4 = \begin{matrix} (21) \\ 4 \end{matrix}$	$\begin{matrix} (16) \\ 4 \end{matrix} - \begin{matrix} (22) \\ 0 \end{matrix} = \begin{matrix} (20) \\ 5 \end{matrix}$		
$\begin{matrix} (12) \\ 9 \end{matrix} - \begin{matrix} (11) \\ 4 \end{matrix} = \begin{matrix} (15) \\ 9 \end{matrix} - 3 = \begin{matrix} (17) \\ 4 \end{matrix} + \begin{matrix} (19) \\ 1 \end{matrix} = \begin{matrix} (20) \\ 5 \end{matrix}$	$\begin{matrix} (13) \\ 2 \end{matrix} + \begin{matrix} (14) \\ 2 \end{matrix} = \begin{matrix} (21) \\ 4 \end{matrix}$		