This document will help you to...
Investigate Mathematical Problems!

# Maths Problem Solving Part 2

Have you had enough of working on My Maths?

Would you rather get out some pen and paper and investigate maths problems?

THIS BOOKLET IS FOR YOU!

There are 10 problems for you to make your way through. None of them are quick so be patient and don't give up!

GOOD LUCK!

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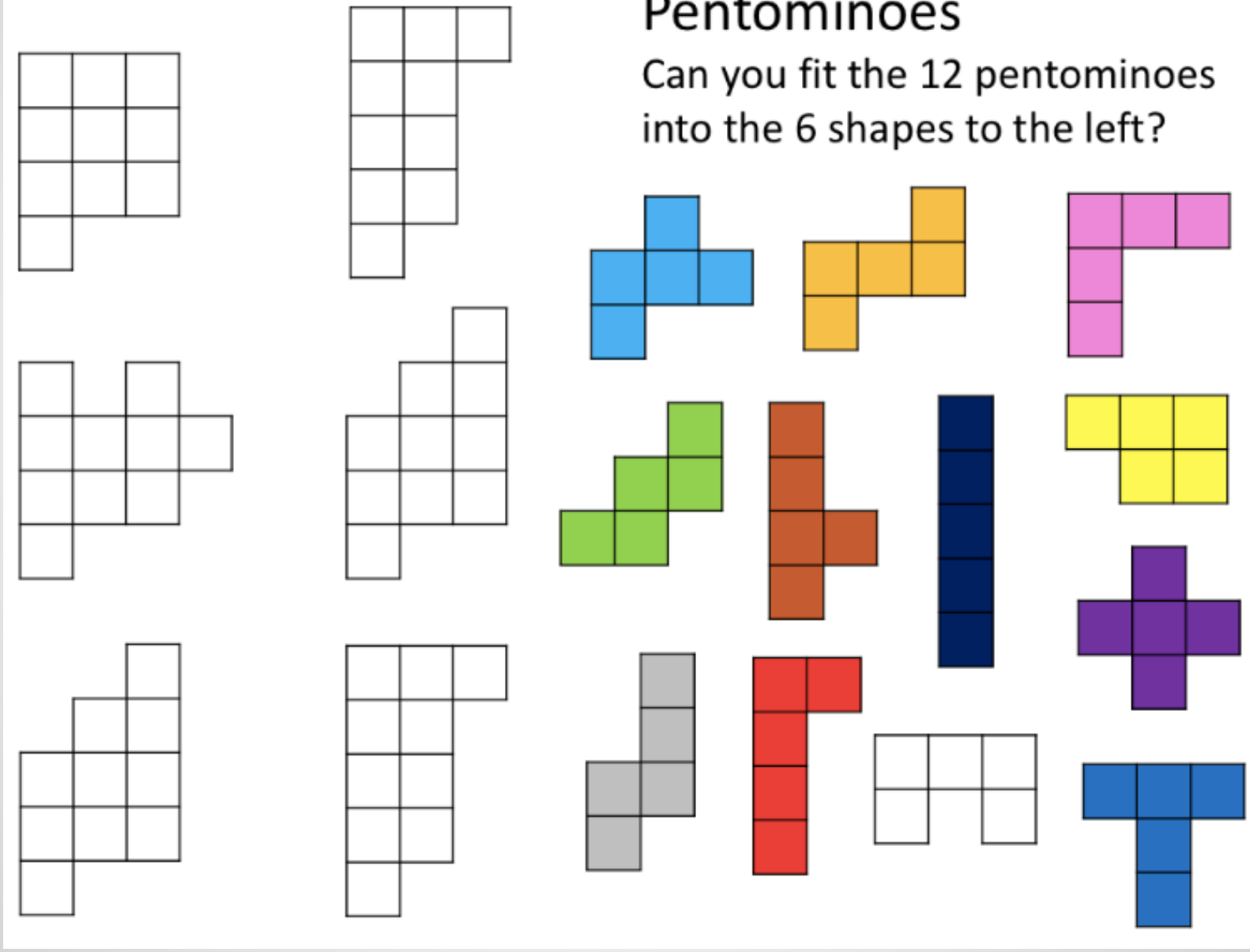
# Pentominoes

Can you fit the 12 pentominoes into the 6 shapes to the left?



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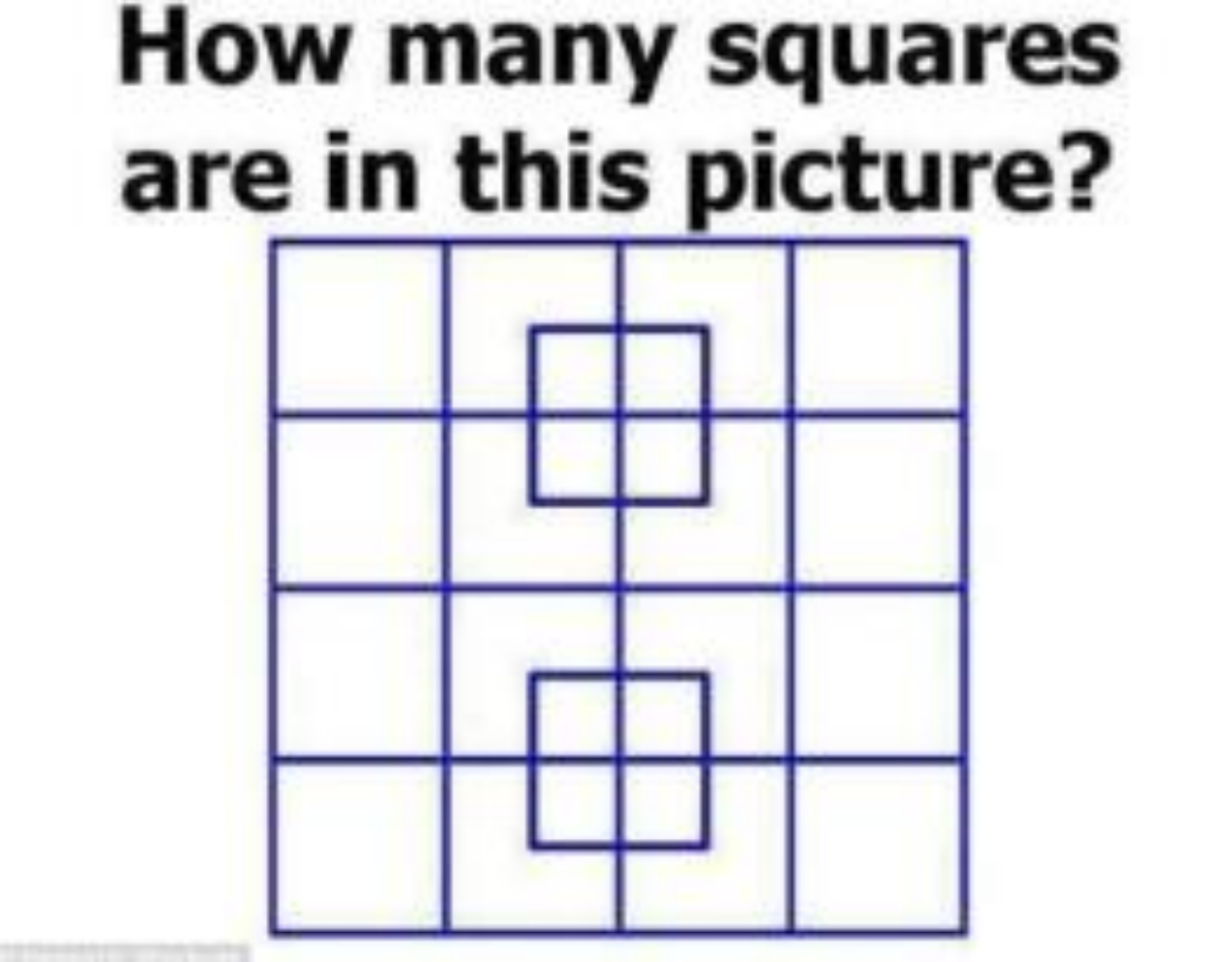
# Squares



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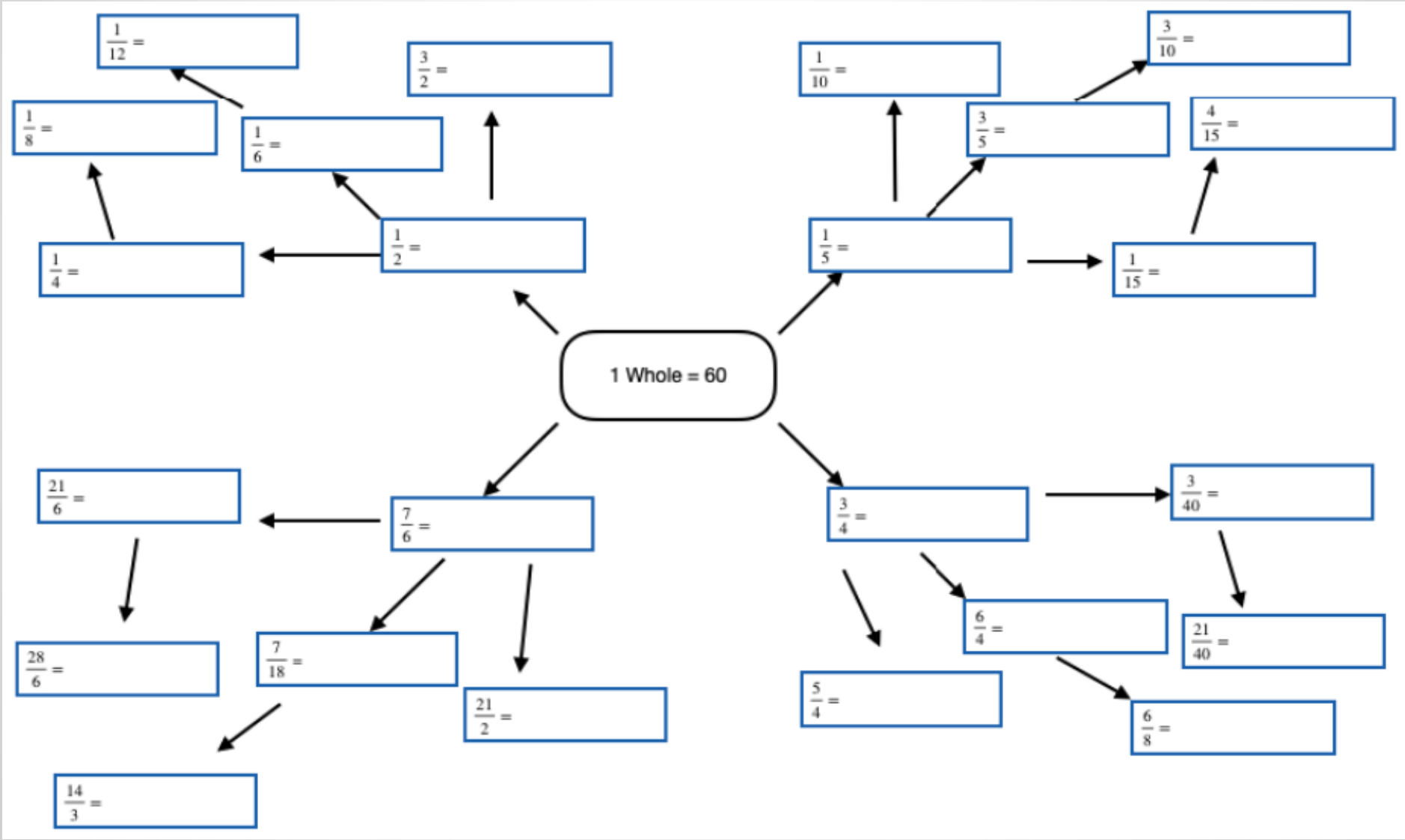
# Fractions of Amounts



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# Trees

In a wood there are 3 types of trees, ash, oak and fir.

- $\frac{3}{8}$ of the trees are ash trees.
- There are twice as many oak trees as fir trees.
- There are 252 more ash trees than fir trees.

How many oak trees are there?

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# Odd One Out

Every card below has a matching pair of equal value, except for one. Which card is the odd one out?

| | | | | |
|---|---|---|---|---|
| 6.5 | 15 | decrease 18 by 20% | 7.2 | 80% of 125% of 16 |
| $\frac{2}{3}$ of 75% of 13 | 5 | 14.4 | 20% of 30% of 120 | 30% of 25 |
| $\frac{1}{2}$ of $\frac{1}{3}$ of $\frac{1}{4}$ of 192 | 8 | 21 | 18 | $\frac{1}{12}$ of 60 |
| 350% of 6 | 9 is 60% of...? | increase 12 by 15% | 17 | 13.8 |
| 16 | 7.5 | $\frac{5}{12}$ of 54 | 22.5 | 11 + $\frac{3}{4}$ of 8 |

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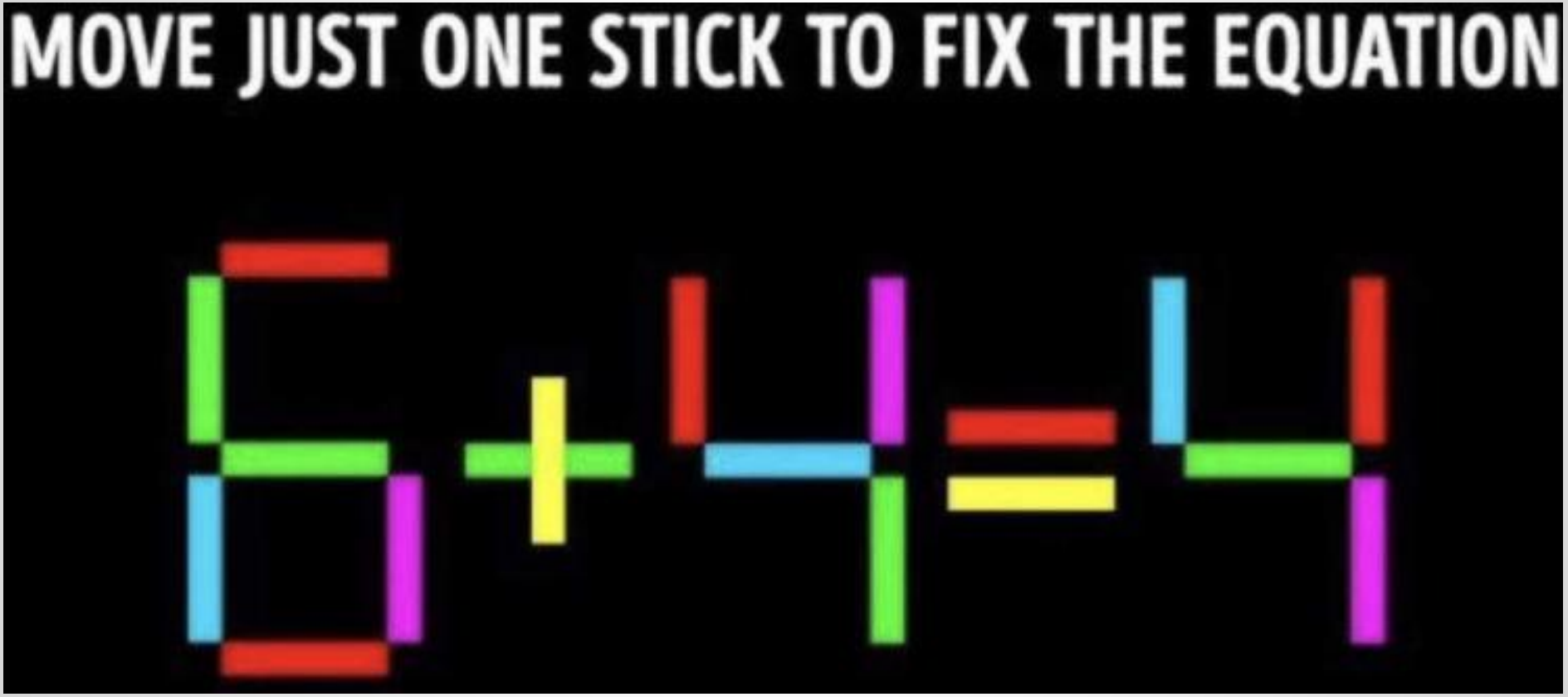
## Sticks



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# Percentages

Sally buys three paintings from McLaughlin Fine Arts Boutique.

She manages to agree a 20% discount off the prices shown below.

She later goes on eBay and sells all three for £300.

How much profit did she make?

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# Stamps

I bought some first class stamps at 70p each and some second class stamps at 61p each.
I spent a total of £11.

How many stamps did I buy?

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# What can you make?

Using all the digits

2 0 1 7

and any of the operators

+, −, ×, ÷, !, powers

how many numbers can you make between 0 and 60?

e.g. $20 + 17 = 37$

$(21 \div 7)! + 0 = 6$

$7^2 - 10 = 39$

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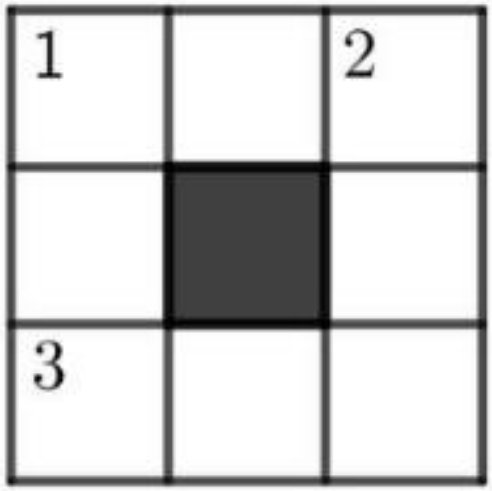
# Crossnumber




Complete this crossnumber using eight different non-zero digits.

| *Across* | *Down* |
| --- | --- |
| 1. A square | 1. A prime |
| 3. A cube | 2. A prime |